



Your Take: Toward a unified front

Unified communications technology has helped Bryan Larrieu cut costs, streamline communications and generate cooperative thinking at healthcare services provider Alere. And over at SugarCRM Lila Tretikov relies on a set of open communications tools as the foundation of company — and customer — communications. **Page 36.**

NETWORKWORLD

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October 13, 2008 ■ Volume 25, Number 40

Harvard's slog to IP call center integration

The university's disparate infrastructure made for a complex project. **Page 12.**

Microsoft lays out SQL Server plans

SQL Server 2008 has some lofty goals, including simplifying complex business intelligence so more users can access data across disparate sources using Microsoft's Excel and SharePoint and Office Communications Server. **Page 16.**

Economic crisis cramps IT budgets

BY DENISE DUBIE

Economic uncertainty is driving CIOs to halt projects, freeze hiring and pile more responsibilities onto existing IT staff.

High-tech has been known to weather economic crises better than other industries, in part because of its role as an enabler to businesses.

The recent deluge of financial failures, however, is causing enterprise IT executives to rethink expenditures over the coming months. For instance, a CIO Executive Board survey of 50 IT leaders in September revealed that 61% are reevaluating 2009 budget plans, 59% are putting

nonessential IT projects on hold, and 24% have introduced a hiring freeze in IT.

■ **Earnings disappointments, IPO dry spell signal financial problems for the IT industry.** **Page 14.**

"For the average company, the trend is a lot of caution going forward. There is too much uncertainty around the bailout and the national election for IT leaders to be confident in new investments," says John Estes, a vice

president with IT staffing and consulting firm Robert Half Technology.

This caution will translate into more work for network executives — without any wiggle room in their budget or access to more

See Crisis, page 14

Mobile learning project gives students free iPhone or iPod

BY JOHN COX



ACU freshman Halie Davis connects with friends, faculty and the World Wide Web via Apple iPhone 3G.

When almost 1,000 freshman students showed up at Abilene Christian University on Aug. 16, they got something more than the usual medical release forms, parking permits and Welcome Week T-shirts.

They got a choice of a new Apple iPhone 3G or iPod Touch, plus a package of ACU-written Web applications to use on them.

The hardware is part of the Texas university's pilot mobile-learning project, which has been gestating for more than a year. About 650 first-year students chose the iPhone, and about 300 the iPod Touch, which is similar but doesn't have the 3G radio (both devices support 802.11g Wi-Fi). ACU pays for the hardware, and students (or their parents) select and pay for their monthly AT&T service plan.

After just six weeks, the freshmen seem fully mobilized. "I use it in four of my five classes," says Halie Davis, a student from Rankin, in west Texas, who chose the iPhone. "If your teacher says 'get out your iPhone and look up a word,' you can do a Google search or check Wikipedia on the Internet. It's really fast."

With their Apple devices, students also get read-only mobile access to files of all kinds stored on

See Texas, page 48

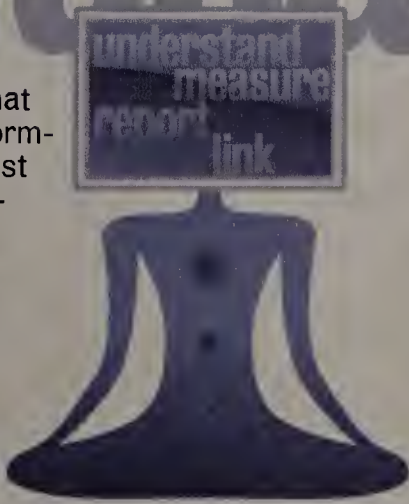
Google, Microsoft spark interest in modular data centers

Container-based data centers are getting attention, though some claim the portable units aren't the environmentally friendly alternatives they're cracked up to be. **Page 24.**

Four steps to application nirvana

understand
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report
link

NetForecast survey shows that adhering to application performance management (APM) best practices leads to app happiness. **Page 33**



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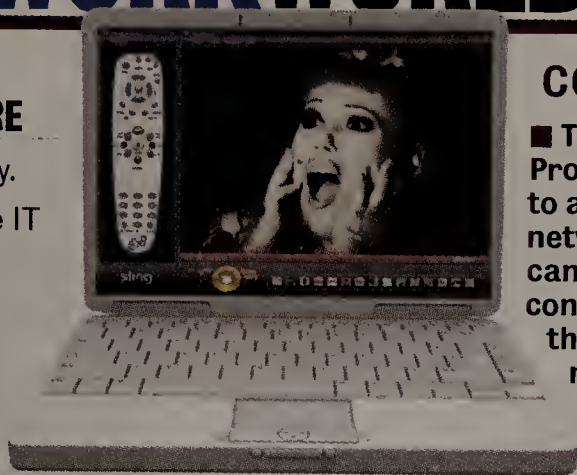
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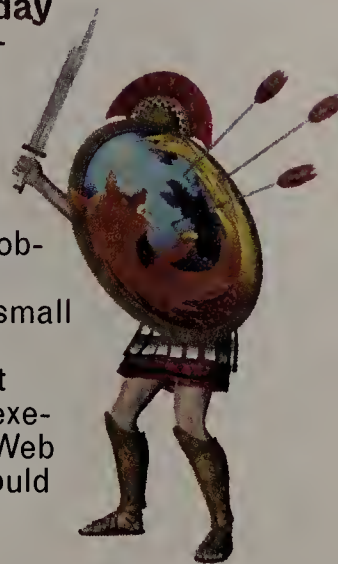
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GOODBADUGLY

Firefox saves the day

A popular free security tool for Mozilla's Firefox browser has been upgraded to block one of the most dangerous and troubling security problems facing the Web today. NoScript is a small application that integrates with Firefox. It blocks scripts from executing on untrusted Web pages. The scripts could be used to launch an attack on a PC.



AMD's 'splitting' headache

Coming off seven straight quarters of losses, Advanced Micro Devices plans to split into two companies, one to design chips and one to make them, while two investment funds owned by the government of Abu Dhabi will contribute new capital. AMD hopes the move will give it the resources it needs to compete better with Intel, which dominates the microprocessor industry.

Man indicted for hacking Palin's e-mail

A 20-year-old Tennessee man has been indicted for hacking into an e-mail account of U.S. vice presidential candidate Sarah Palin, according to court records. David C. Kernell was indicted last Tuesday by a grand jury in the U.S. District Court for the Eastern District of Tennessee on a single charge of accessing a protected computer. The indictment carries a maximum sentence of five years in prison and a \$250,000 fine. Kernell pleaded not guilty.

Four steps to application nirvana

Survey shows that adhering to application performance management (APM) best practices can lead to app happiness. **Page 33**



IT Roadmap: Security and compliance

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Editor's note: Mark Gibbs' column on the Sarah Palin e-mail breach — and the results of an online poll showing 36% of networkworld.com visitors thought it could be justified (www.nwdocfinder.com/7022) — generated considerable discussion. Here are some comments. Read more and jump into the discussion at www.nwdocfinder.com/7023.

Like you, I was shocked (appalled?) to see 36% of respondents affirm that acquiring access to Sarah Palin's private e-mail without her permission could be "justified." The arguments of some of these persons were no more rational than saying it would be ethical to take money from your mother's purse because she naively leaves it lying in her bedroom when people come to visit. The ethical thing to do would be to bring her carelessness to her attention and offer to help her correct it.

I sincerely hope this 36% does not reflect the number of unethical — or irrational — persons in our industry.

Richard Whiting

It's really very simple — IT professionals are human, too. It's wrong to want a little illegal revenge (especially in a matter of professional trust) but understandable. The use of outside, consumer e-mail could be an honest attempt to separate public service from private and party communications. It's also possible that President Bush will wear a pink tutu at his next press conference. Doesn't matter, it's still wrong. If she is involved in illegal or unethical activities they will come to light soon enough.

Of course, the core feeling is frustration. Bush has been hiding behind one tissue paper of plausibility after another and he's hardly the only one. When the new gal in town appears to be pulling the same stuff after stonewalling

a serious investigation into potential criminal activity (her own) it's hard to remember that she still deserves the same constitutional protection that everyone does. Yes, I know she supports a president who thinks the Bill of Rights is a rather dated document. Still doesn't matter. If freedom and democracy are to mean anything we have to give our enemies the same presumption of innocence, the same protections we would grant ourselves. If we don't we are no better than, well, our president.

Randy Grein

“It's real scary that this many people in the IT world have no ethics. I'm sure they must daily use their IT resources to spy on their co-workers and company, and somehow think that their behavior is justified.”

It's real scary that this many people in the IT world have no ethics. I'm sure they must daily use their IT resources to spy on their co-workers and company, and somehow think that their behavior is justified.

My daughter had her Yahoo e-mail hijacked by a "friend" a couple of years ago using the exact same method you described. A lot of damage can be done when someone starts sending e-mail using your account, needless to say. I was able to close her account and set up one on Gmail. End of problem. Yahoo's lost password feature is less than worthless and should have been changed years ago. It's obvious that they didn't listen to me.

Mike Ullman

I, too, was stunned by the NW poll numbers (and others) that showed so many IT professionals legitimizing the violation of her e-mail account. Sadly, I think the numbers would have been even higher had there been anything politically titillating in her account. Such is the antagonism of this year's political season. (Of course, I did have to use my personal Yahoo mail account, in order to comply with my employer's security policy, but that is for another article.)

Ken Moss

I used to work in the clandestine business of electronic snooping. In that field, the only rule is sender and receiver beware. Any action, short of killing, was considered OK. Then came Watergate and the laws (observed only by some U.S. government agencies) against "eavesdropping" on U.S. citizens. Now, it would appear, we observe the open warfare attitude that "the ends justify the means," particularly when it comes to attacking some political candidates.

Steve Jones

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 492 Old Connecticut Path, Framingham, MA 01701-9002. Please include phone number and address for verification.

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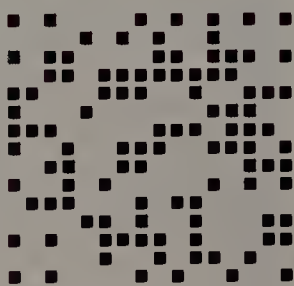
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BLOGOSPHERE

■ Fractals and network security.

Richard Stiennon writes in his Stiennon on Security blog, "Networks are fractals. On a large scale they are represented by simple assumptions: outside and inside, the Internet versus the corporate network. As you get more granular you see the remote offices, home users, and mobile devices. You even get granular differences based on protocol: Skype yes, BitTorrent, no. Yes it is complicated. Yes it is difficult to protect. But it is your network, your assets, your business. You have to protect the network so you have to defend your perimeter. You cannot invest the type of money it would take to protect every endpoint, application, database, and user from every attack. It is a costly mistake to buy into deperimeterization." www.nwdocfinder.com/7027

■ **Five things the BlackBerry Storm got right that the iPhone didn't.** Mitchell Ashley writes: "First, be a great phone and e-mail device. That's what Smartphones are supposed to do. The two fundamental killer apps for any Smartphone are first being a great phone and second being a great e-mail device. BlackBerry has an excellent track record of succeeding at both. I'll use my BlackBerry World Edition 8830 as an example. Phone quality is top rate. It's simply an excellent phone, whether you are talking phone quality or the software user interface of the BlackBerry. I never have complaints about call quality and don't suffer many dropped calls." www.nwdocfinder.com/7028

■ **Gender gap continues in IT, telecom.** Matthew Nickasch writes: "I had the opportunity to discuss the issue of self efficacy with several of my female colleagues in an MIS environment. Almost all of the discussions about resistance towards an MIS career surrounded this inaccuracy." www.nwdocfinder.com/7029

■ **CCDE Practical Beta needs some work.** Michael J. Morris writes: "I'm sure the goal of some of the questions was to be ambiguous to make you think and research the documents more, but some could easily be interpreted in two different ways, leading to correct, yet wrong answers. Cisco has noted in the past that, in some places, there are multiple right answers. Some right solutions might be worth more points than other right solutions. Still, I think this needs to be cleaned up a bit more. The questions need to be easily understandable so as to put the tester on the right path, even if they choose a slightly different solution for partial points." www.nwdocfinder.com/7029

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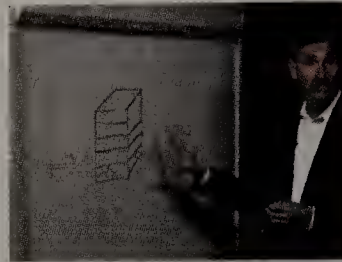


Out of your ear headphones

Earbud headphones are great, but make it hard to hear the surrounding world. Keith Shaw tries out two headphones that deliver your music without plugging your ears.

www.nwdocfinder.com/7032

TECH UPDATE 2.0:



Physical security enhanced by nets

How physical security systems — cameras, sensors and communications gear — can be meshed into a cohesive monitoring system using networking and software.

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IDG NEWS WIRE:



Toshiba readies fuel cell

Toshiba is close to launching its first commercial direct-methanol fuel-cell, a device that produces electricity from a reaction between methanol, water and air.

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BEST OF NWW'S NEWSLETTERS

Barbarians at the gate? Not with this Web gateway

Tech exec: According to Gartner, "The Internet and Internet applications will be the primary sources of malware infections in the enterprise in 2008 and beyond. However, most organizations do not effectively filter malware from Web traffic. Detecting and preventing malware infections will increasingly require a network gateway at the Internet edge." I don't know if John Boline read that statement from Gartner before he went looking for a Web gateway product. Probably not. But Boline did start shopping for a solution after his company had a couple of events that let the IT department know it had a problem. Boline is a service manager at Hagerman & Company, a provider of CAD/CAM products and services. Hagerman is headquartered in Illinois and has offices in 18 other U.S. cities. The company runs all Internet access from its branches through the corporate office. About a year ago, some employees were downloading work materials off a legitimate Web site that just happened to be infected with malware. Before long, local PCs at Hagerman were also infected and started serving up undesirable content. The devices had to be cleaned manually. This sort of incident kept repeating itself. Boline says the company suffered a rate of

malware infection of about one machine every week. The time and effort to clean these PCs was growing. He resolved to find a solution that would stop the malware from entering his network at the Web gateway. www.nwdocfinder.com/7024

Wireless: The battle to woo you to a particular wireless camp has heated up in the past month. The first U.S. mobile WiMAX service went live last week, just as devices with embedded connections to worldwide High-Speed Packet Access (HSPA) 3G services began being aggressively marketed by the GSM Association. In the meantime, integrated, flat-rate global Wi-Fi voice and data service packages have also become available. The U.S. gained a commercial mobile WiMAX service in Baltimore from Sprint Nextel's Xohm business unit, with Washington, D.C., with Chicago to follow by year-end. Sprint and its joint-venture partner Clearwire expect to cover the top 100 U.S. markets with mobile WiMAX service by late 2010. Worldwide, there are more than 407 commercial WiMAX service deployments in 133 countries, according to the WiMAX Forum. www.nwdocfinder.com/7026

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Microsoft set to release 11 security updates

This week will be a busy one for system administrators as Microsoft plans to ship 11 security updates — four of them rated critical — for its products. The patches will include fixes for critical security bugs in Windows Active Directory, Internet Explorer, Excel and the Microsoft Host Integration Server. There also will be six less-critical updates for Windows, and a “moderate” patch for Office. This month’s Patch Tuesday marks the debut of two Microsoft security initiatives: The Microsoft Active Protections Program and the Exploitability Index. The MAPP program gives security vendors an edge on writing protection against new attacks by offering them an early peek at the bugs Microsoft will be patching each month. The Exploitability Index should make it easier for customers to decide which patches to install first by giving Windows users a better idea of the bugs Microsoft finds most worrying. www.nwdocfinder.com/7035

BlackBerry Storm takes on iPhone.

Verizon last week announced that it will be supporting Research in Motion’s BlackBerry Storm smartphone on its network in November. RIM’s first touchscreen device can connect to either EV-DO Rev.A or HSPA 3G cellular networks and features 1GB of onboard memory storage and a card slot that allows for as much as 16GB of additional storage. So how does Verizon’s BlackBerry Storm offering stack up against AT&T’s iPhone offering? Verizon trumps AT&T in call quality, according to industry surveys, but AT&T has a slight edge in network coverage. In terms of enterprise features, the BlackBerry still sets the standard for enterprise wireless devices because of its larger array of security policies, including the ability for IT departments to disable its digital cameras. For more head-to-head comparisons, check out our full coverage online. www.nwdocfinder.com/7036



ty, according to industry surveys, but AT&T has a slight edge in network coverage. In terms of enterprise features, the BlackBerry still sets the standard for enterprise wireless devices because of its larger array of security policies, including the ability for IT departments to disable its digital cameras. For more head-to-head comparisons, check out our full coverage online. www.nwdocfinder.com/7036

Firefox for Mobile alpha release due.

Mozilla this week is set to unveil the alpha release of its mobile Firefox browser, code-named Fennec. The alpha code is aimed at Mozilla community members, specifically to give the innovative touch user interface and the feature set a grueling workout, Mozilla says. The alpha version supports fingertip touch interaction, with the browser designed to use the full device screen for content. One add-on that will soon be introduced is based on Mozilla’s Weave project: the goal is to let a user seamlessly move from desktop to

mobile Firefox. Initially, the code will only be available for Nokia’s N810 Internet Tablet. To let more developers work with the alpha code, Mozilla is considering a version to run on Windows PCs.

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Citigroup to sell off its Indian back-office operations.

Tata Consultancy Services, India’s largest outsourcer, has reached an agreement to acquire Citigroup’s interest in Citigroup Global Services, its business process outsourcing arm in India, for about \$505 million. Under the agreement announced last Wednesday, TCS will provide \$2.5 billion worth of services to Citigroup and its affiliates over the next nine and a half years, TCS said. The transaction is expected to close in the fourth quarter of this year. Citigroup Global Services has more than 12,000 employees in India, and is expecting revenue of \$278 million this year. TCS already provides BPO, IT and related services to Citigroup.

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IBM upgrades top-selling Unix server.

IBM spruced up its Unix servers with faster processors and new management software, targeting customers who want to use its hardware for virtualization and server consolidation. The Power 570, IBM’s top-selling mid-range server, is available with a 5GHz Power6 processor, which was previously available only in IBM’s high-end Power 595 system. IBM also doubled the maximum density for the Power 570, so customers can put as many as eight 4.2GHz processors in each server node, or as many as four 5GHz processors. The nodes can be stacked four high for a total of 32 4.2GHz processors in a single box. In addition, IBM is testing a new capability for its PowerVM virtualization software that lets administrators share virtual system memory between partitions. Also planned is a new version of Active Energy Manager that lets ad-

ministrators cap the energy being used by a pool of servers.

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Dell bundles backup gear for SMBs. Dell is putting together hardware and software for backup and recovery in one system, with integrated software, for small and midsize businesses. With its PowerVault DL2000 platform, which will go on sale later this month, Dell aims to make it easier for SMBs and branch offices with limited IT expertise to centralize and automate their backups. The platform consists of the DL2000 (a Windows-based x86 server running either a CommVault or a Symantec software stack) and a Dell PowerVault MD1000 disk array. As an option, customers can have a PowerVault TL2000, TL4000 or ML6000 Tape Library added on for long-term archiving. The system will be put together in the factory and shipped as a turnkey solution. Prices start between \$10,000 and \$15,000.

www.nwdocfinder.com/7040

Elite group to study identity/cybercrime issues.

IBM, LexisNexis and the Secret Service are among a group of corporations, government agencies and academic institutions that has formed to study and help solve identity management challenges around cybercrime, terrorism and narcotics trafficking. The Center for Applied Identity Management Research will study those issues and focus on developing real-world tools and best-practices recommendations to solve them. The nonprofit research organization, which will be headquartered at Indiana University, brings together experts in criminal justice, financial crime, biometrics, cybercrime, data protection, homeland security and national defense. Gary Gordon, a senior scholar in identity management at Indiana University School of Law, will be CAIMR’s executive director.

www.nwdocfinder.com/7041

Oracle to buy project management player.

Oracle last week said it plans to buy Primavera Software, maker of project portfolio management applications. Along with technology, Oracle stands to gain a significant customer base through the upcoming deal. Primavera’s software is being used by 375 of the top 400 engineering companies and all five branches of the U.S. military, according to the companies. Terms of the deal, which is expected to close by year-end, were not disclosed. While large vendors such as CA and IBM have offerings in the PPM arena, there also are a number of smaller vendors, such as Planview and Cardinis. As for Primavera, it “is the granddaddy of project management,” said Forrester Research analyst Ray Wang. “Every major construction project, every major road project... This is like an industry standard.”

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Harvard details call center trek

BY TIM GREENE

How do you deploy a centralized IP contact center across 10 different networks? This is the challenge that the telecom department of Harvard University faced in 2001 when undertaking a replacement for its existing system.

Last week, Michael Rowe, manager of systems and applications for Harvard's Telecommunications Department, shared how the university overhauled the call center infrastructure to embrace IP, expand features and keep costs down.

Because of the complexity of the mission and the fact that no commercial call center was designed for such an environment, after seven years the project is still a work in progress, Rowe told the Association for Information Communications Technology Professionals in Higher Education, also known as ACUTA.

No Harvard unit has a call center in the traditional business sense of a roomful of agents trained to handle similar calls. Instead, the centers consist of groups of agents (as few as three but no more than 21) spread around Harvard facilities in Boston and Cambridge, Mass. The goal was to have a single call-distribution device that could handle all of them.

At the outset of the project in 2001, the phone system was centralized, delivered via Verizon Centrex over Primary Rate Interface trunks to 30,000 phones. Call-center features also were

provided by Verizon, queuing up everything from help-desk calls to questions about university medical benefits.

When Verizon decided to phase out the service, Harvard went looking for a replacement that could route calls to appropriate extensions as they came in.

Even with the help of a consultant, finding the right product was difficult, Rowe says. After reviewing 16 RFPs, the telecom team chose six finalists to demonstrate their wares. The results were dismal: Only a few managed to get their systems to work in the university environment. The team chose Customer Interaction Center (CIC) from Interactive Intelligence, because it had more flexible administration and allowed for expansion to meet future demand, he says.

Still, CIC wasn't ideal. It required adding Active Directory and Exchange servers to the network. Initially Rowe placed two servers in the Harvard data center where they could back each other up automatically, but the automatic backup never worked smoothly. The servers proved temperamental, failing over at the slightest glitch and always requiring human intervention, he says. "The software worked great, the switchover was the problem. It was not a good solution," he says.

So, when the telecom department moved to a

site served by two central offices, Rowe saw it as an opportunity to split up the CIC servers also, sacrificing redundancy but gaining diversity of routing that could keep the university supplied with service if one central office failed, he says.

CIC had other challenges. It was designed to work best when phones are plugged directly into it. Because Harvard phones were on the Centrex network, each had to be treated as a remote extension. That meant bridging incoming calls to the agent extensions, which ate up two PRI channels — one for the incoming call and one for the bridge to the right extension.

The software agents that ran on agent workstations were also a bad fit. They required upgrading periodically, and that was a logistic and administrative nightmare. The various call-center-agent clients were dispersed on machines and networks with different support policies and staff.

To overcome this problem, Harvard decided to use Citrix Systems to get the fat-client CIC software off agents' workstations and centralize the application. That involved installing a Citrix server and learning to support it, but the effort was worth it by eliminating desktop maintenance, he says.

By 2007, maintaining PRI cards on the CIC server became unwieldy. So, the university installed AudioCodes TDM-VoIP gateways to route calls between the Centrex service and the CIC servers.

This setup let Harvard link the CIC servers in the two via IP so they again could back each other up. So, he now had redundant, backup servers placed in separate locations to improve survivability in a disaster.

About the same time the university decided it should protect the Citrix server better and make it more robust, so it expanded the deployment. Citrix servers were placed in isolated network segments between firewalls, where they provided access to the CIC servers. This improved security for the servers and allowed support for multiple Citrix versions. It also allowed room for growth.

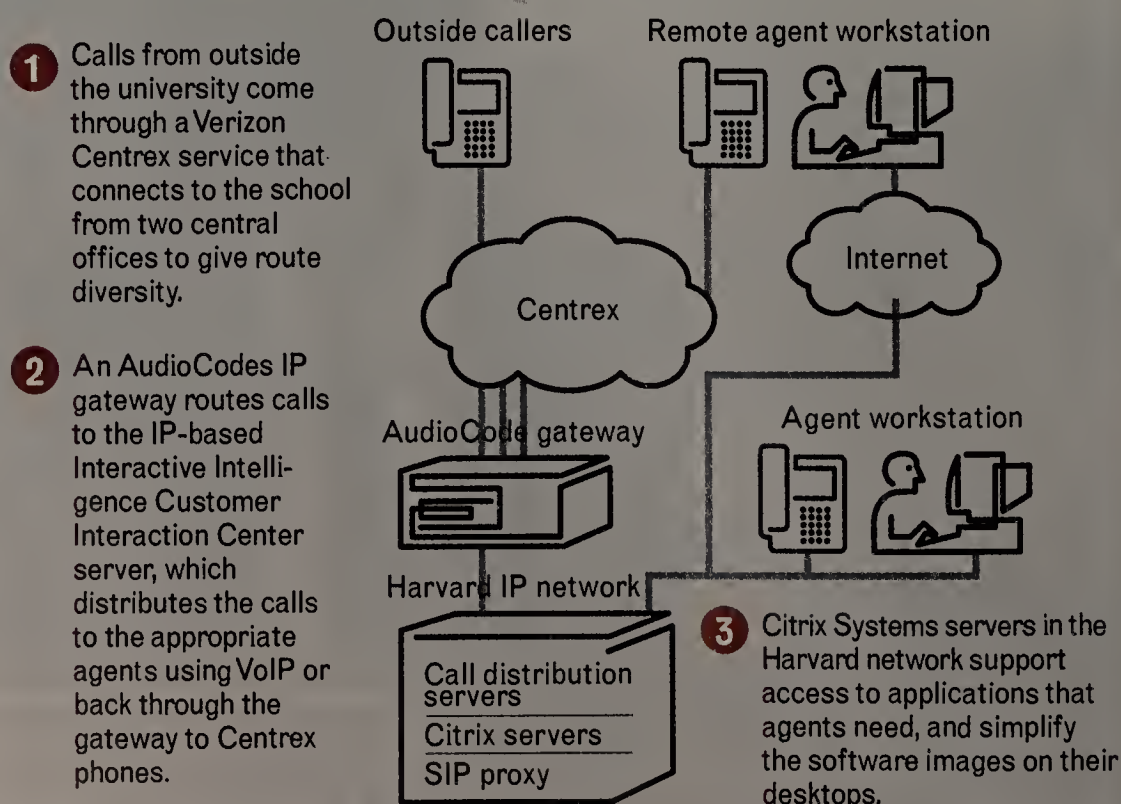
The downside is that the expanded Citrix deployment is more expensive than the single server, and represents one more technology to manage, Rowe says.

Harvard recently installed an operator's console on the CIC platform, enabling directory search by whoever answers the phone. The console was released about the same time Harvard was looking for a new directory assistance application, so it was a good fit, Rowe says.

With 60,000 directory listings, the database is large; search was slow, but at Harvard's request, Interactive Intelligence has streamlined it so a search won't start until a full name is entered. ■

How Harvard distributes its call centers

Integrating Centrex phones with an IP call-center platform that serves agents in Harvard University's small and dispersed call centers proved to be a challenge. This diagram is a conceptual look at how it's done.





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Crisis

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personnel. The idea of donning multiple hats isn't a new one for many IT shops, but today's economy is changing what used to be a quick fix into standard operating procedure.

"Our operating expenditure budgets have been frozen and cut, and we currently have a hiring freeze in effect. There is an obvious direct financial impact to our institution when there is this amount of uncertainty in the market," says John Turner, director of networks and systems at Brandeis University in Waltham, Mass.

As a member of senior management, Turner says it's his job to align staff with emerging responsibilities. For instance, the need for storage administration at Brandeis drove Turner to assign additional responsibilities to a systems engineer and a database adminis-

trator. Other organizations may be able to create a new position based on the need to better manage storage, but Turner doesn't have that option. Putting the work on existing staff, however, can provide the IT professional some benefits, he says.

"They are in the trenches and they are not removed from any bit of the technology, which is good in terms of broadening their knowledge and skills," Turner explains. "Plus, when a systems engineer needs storage, in our case, he doesn't have to request the space; he can provision it on his own."

The downside is that IT at Brandeis has been operating on a tight budget for years, and additional economic stress further burdens staff and limits what IT can accomplish in the long term.

"Brandeis has not been graced with a large staffing budget; and the problem when you do things efficiently to start is that when a crisis occurs and there is a budget crunch, there is nowhere to cut from," Turner says. "The stress on staff is short term, they can only do so much work for so long; but long term, the institution will suffer if we can't hire."

Get used to pitching in

James Kritcher says his organization in the past 12 months has retracted requisitions for additional personnel as a result of the business climate. As vice president of IT at White Electronic Designs in Phoenix, Kritcher pitched in to head up the company's enterprise risk management (ERM) program.

"Certainly one factor in my assumption of these tasks was a hesitancy to incur the costs of hiring a new person to perform them," Kritcher explains. "I had the knowledge, and was willing to take them on because it will give me additional credibility with my IT peers, as well as the company's board."

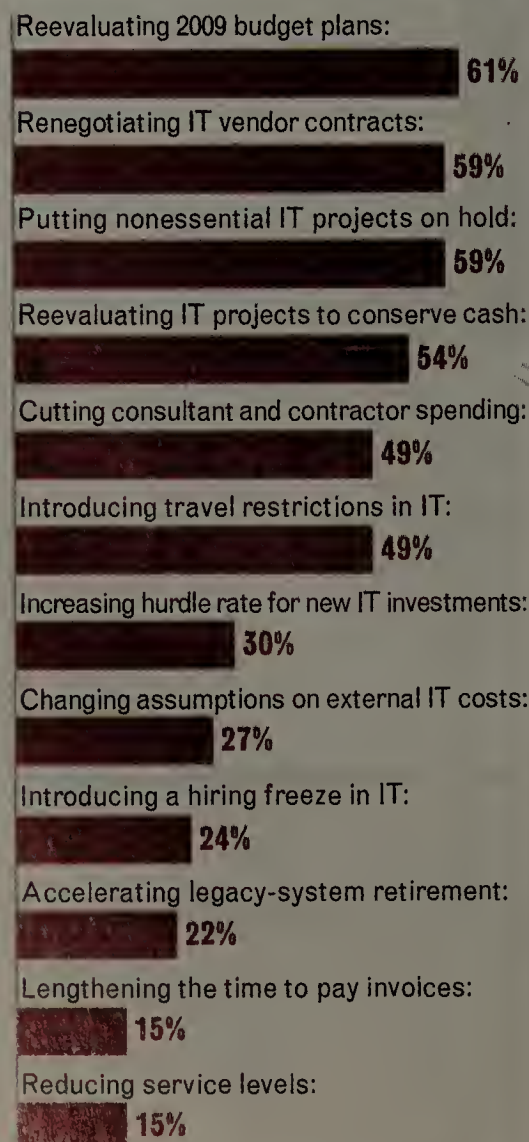
One caution, however, is to not take on too much. Kritcher says he tries to approach additional work with realistic expectations and choose duties that seem a natural add-on to his primary responsibilities. For instance, his ownership of the company's ERM program evolved from his work in IT disaster-recovery planning.

"You have to ensure your IT responsibilities don't suffer," Kritcher says. "Because as much as doing more work can help your credibility, if

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Economic crisis causes IT budget cuts

A poll of 50 CIOs shows that a majority are reassessing how to spend their IT budget dollars in 2009.



SOURCE: CIO EXECUTIVE BOARD

Economic malaise hits the IT industry

BY JON BRODKIN

Some disappointing earnings and a shortage of IPOs are two signs that the struggling economy is taking a toll on the technology sector.

Enterprise-software giant SAP says customer concern about stock markets caused "a very sudden and unexpected drop in business activity," resulting in lower-than-expected earnings. CRM vendor RightNow Technologies says it lost money in operating expenses in September, essentially because customers are taking longer to pay their bills.

IPOs, meanwhile, are scarcer than they have been in 30 years. That's bad news for the tech industry, which typically does more IPOs than any other sector.

Customers are less likely to buy new products in a bad economy, of course. The question is how long the current malaise will last.

"It's not clear to me whether or not we've hit the bottom of the trough yet," says Pund-IT analyst Charles King about the ongoing stock market plunges. "The further it goes down from here, the longer it will take to recover."

Some financial analysts have cut their earnings forecasts for such companies as IBM, HP, Dell, Sun and EMC, according to a Dow Jones report.

IBM, however, last week reported a 20% increase in net income for its third quarter and says its profit outlook for the full year remains on track. Also reporting good news is NetScout

Systems, a network performance-management vendor. The company says its earnings remain on track because of strong sales in the wireless and government markets.

The storage market has performed relatively well despite the tough economy, because it's difficult to put off storage purchases when data volumes are greatly expanding, King notes.

Virtualization also should continue doing well because it saves customers money by allowing them to run more applications on fewer servers, King says.

Such companies as SAP and Sun, however, could continue to suffer because they rely heavily on customers in the financial and banking industries, the failures of which are driving the current economic crisis, King says.

"There's so much uncertainty in the financial and banking industries, I would expect purchases there to slow dramatically," King says.

SAP announced on Oct. 6 that its third-quarter revenue will be around \$2.6 billion, more than last year but less than expected. Things did not take a turn for the worse until near the end of the quarter, says SAP co-CEO Henning Kagermann. SAP stock dropped more than 15% after the company announced its updated revenue expectations.

For many IT companies, "deals were either cancelled or deferred [the last two weeks of September] because of the current market cli-

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you don't perform, your reputation can take a hit — even if you had the best intentions.”

At Metrocorp Publications, IT has been asked for quite some time to put off nonessential projects, such as desktop operating system upgrades. “For the past six months, we have been asked to hold off on all investments that are nonessential to provide a cushion for the economic downturn our management expected would come,” says Chris Majauckas, computer technology manager for the Boston company that puts out *Boston Magazine* and *Philadelphia Magazine*.

Because reducing an IT staff of two employees isn't feasible, Majauckas works to find ways around spending money — even taking on mechanical and electrical assignments, such as modifying cubicle design and rewiring the area for staff.

“Before I look to an outside vendor, I assess if I can perform the job and save the company a few thousand dollars,” Majauckas explains. “It makes me more valuable to the company and hopefully if it comes to cutting staff, management will think twice about reducing my position to bring in a contractor.”

If economic turmoil doesn't always force IT to cut budgets and slash staff, it certainly reminds them to eliminate redundancy in duties. Bruce Meyer, director of network ser-

vices at ProMedica Healthcare in Toledo, Ohio, says his organization is consolidating functions performed on the voice and data side under his purview. The voice and data network engineers used to operate independently, but as ProMedica rolls out VoIP, the opportunity to streamline operations presented itself.

“No one is losing a job necessarily, but everyone is tight now, so we are trying to get more out of the staff we have,” Meyer says. “Consolidating this Layer 1 functionality — a jack is a jack and cable is cable, and it's all in the same closet now — prevents us from having two people doing the same thing and adds more efficiency to our staff.”

Others say the current economy simply shines a spotlight on how IT is expected to operate normally. For instance, a company considering establishing a director of business applications might opt to reassign staff instead of hiring a new employee regardless of Wall Street's status.

“It's the nature of IT now to blend responsibilities and create dual roles, in part because some of the technical capabilities can be applied across IT domains but also because it simply doesn't make sense to spend \$80,000 per year to hire a full-time employee when you can get the job done by making that role one-third of someone's job,” says Chris Holbert, CIO and COO at LaunchPad Communications in Los Angeles. ■

Economy

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mate,” writes David Mitchell of research firm Ovum. “Losing a deal to a ‘no deal’ rather than to a competitor was commonplace.”

Companies should diversify the types of products and services they sell and target geographic regions abroad, Ovum says.

SAP rival Oracle still seems to be doing well, according to a Goldman Sachs research note. Maintenance contracts, a continuing source of revenue, represent nearly 50% of Oracle's sales, and about 40% of SAP sales.

RightNow Technologies, on the other hand, is suffering from the same problems afflicting SAP, according to Goldman Sachs. “The company now expects to report negative cash flow from operations in the quarter primarily due to a lengthening of payment terms and slower cash collections,” the analyst writes.

While long-established companies are feeling the pain, so are start-ups trying to get off the ground. There were zero venture-capital-backed IPOs in the second quarter of 2008, the first time that's happened in 30 years, according to PricewaterhouseCoopers. In the first three quarters of 2008 combined, there were six venture-capital-backed IPOs, the lowest total since 1977, according to the National Venture Capital Association.

IDG News Service contributed to this report.

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Microsoft airs SQL Server plan

SQL Server, Office are key to driving business intelligence to users

BY JOHN FONTANA

Microsoft last week began its uphill battle to make business intelligence software pervasive across corporate computing through capabilities it will build into its Office desktop suite and infrastructure software spearheaded by SQL Server.

Even before the Nov. 7 official general release of SQL Server 2008, Microsoft took the unusual step of outlining the next version of the database and a set of BI add-ons and integrations designed to make the technology easily available via familiar Windows-based tools.

The company made the announcements last week at its second annual business intelligence conference.

At the conference, Microsoft said its goal is to build a business intelligence platform using the next version of SQL Server, code-named Kilimanjaro, SharePoint Server, Office Communications Server (OCS), Office Performance Point Server and the Excel desktop spreadsheet program along with other Office applications.

The intent is to simplify complex business intelligence technology so more users can access data across disparate sources, aggregate that data, build charts and reports using Excel, and share the resulting applications via SharePoint and OCS.

Microsoft also plans to include a highly scalable data warehousing version of SQL Server that will be offered in an appliance by its hardware partners. "They are trying to break the mold on how BI has been done and set the stage for how BI will be done going forward," says John Hagerty, vice president and research fellow at AMR Research.

Today, business intelligence is constrained mostly by the financial and manpower resources IT can dedicate to building and deploying the pieces needed on the client and the server. Microsoft wants to eliminate that constraint by giving users self-service tools to build their own business intelligence applications via access to such corporate data sources as SAP.

However, Microsoft says the platform will ensure IT maintains governance over access controls to corporate repositories and individual files.

But it won't happen overnight.

"[This] is not going to be available until 2010 so we are talking a long-term vision and not near-term deliverables," Hagerty says.

Microsoft is wise to announce its intentions so customers can "get their heads around it" given the drastic changes Microsoft seeks in whittling down monolithic business intelligence systems into just another set of desktop applications, Hagerty says.

Accelerated timeline

Just two months after the release of SQL Server 2008, Microsoft is outlining the next version and its plans to have the database anchor a set of new business intelligence capabilities that it hopes will bring BI to the masses.

- Jan. 14, 2006 — SQL Server 2005 Enterprise Edition released.
- Aug. 6, 2008 — Microsoft releases SQL Server 2008 to manufacturing (official general-availability date is Nov. 7, 2008).
- Oct. 6, 2008 — Microsoft unveils next version of SQL Server code-named Kilimanjaro; Gemini, a set of self-service analysis capabilities; and Madison, a highly scalable database appliance.
- First half of 2010 — Delivery of Kilimanjaro, Gemini, Madison.

The Kilimanjaro version of SQL Server is slated for release in the first half of 2010 with a focus on self-service and reporting capabilities for BI. Microsoft plans to have a community technology preview (CTP) available within the next 12 months.

The self-service features are wrapped up in a set of technologies code-named Gemini, which let users build business intelligence applications that can access data across many sources, compile the data into charts and reports, and share those results.

Microsoft also plans to integrate the unified communications capabilities of Office Communications Server, which includes instant messaging and VoIP, to aid the sharing of BI results.

Microsoft says much of the Gemini technology will be tied to Excel, allowing users of that desktop program access to the self-service analytics.

To succeed at the business intelligence transformation, Microsoft faces an uphill battle against established players who have owned and defined the BI landscape for a number of years.

In addition, those pure-play vendors are working under the umbrella of the giants in the software industry: Business Objects is owned by SAP; Cognos has been acquired by IBM, and Hyperion is part of Oracle.

A report by Gartner earlier this year said Microsoft still "lags behind pure-play vendors in terms of metadata management, reporting, and dashboard and ad hoc query capabilities."

Those are deficiencies Microsoft plans to systematically address.

With Gemini, Microsoft plans to keep IT at the top of the food chain. "One important thing about Gemini is managed self-service," says Fausto Ibarra, director of product management for SQL Server. "Managed means IT is in

control of the process where today end users use Excel without control of IT or without control of data."

With Gemini, IT will be able to see how data is being shared, have control of security on the data and will make data sources available to users.

Those sources could include ERP data, mainframe applications and independent software programs.

Another key feature of Gemini is in-memory BI, which analyzes large amounts of data in memory in order to speed performance.

"We believe the combination of Kilimanjaro with the Gemini technologies plus Madison will enable us to truly democratize BI and make it available to everyone in the organization," Ibarra says.

Last week, Microsoft also unveiled plans for Madison, a highly scalable database technology that would be available in an appliance. Madison integrates SQL Server with technology the company acquired when it bought DataAllegro earlier this year.

DataAllegro developed large-volume data warehousing appliances, and Microsoft hopes to scale Madison to handle hundreds of terabytes of data. Last week at its business intelligence conference, Microsoft showed a demonstration of Madison using 1 trillion rows of data.

Microsoft also plans to use data quality technology acquired when it bought Zoomix in July to enhance the quality of available information. Microsoft would only say the technology will come in "future versions" of SQL Server.

CTPs of Madison will roll out in the next 12 months, with the appliances available in the first half of 2010. Dell, HP, Unisys, Bull Systems and EMC have signed on as hardware partners. ■

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WHAT DO YOU HAVE TO SAY?



Sprint zooms Xohm into business

BY JOHN COX

The gleaming black shuttle van slams down into a pothole, jolts and shudders over construction-scarred streets in downtown Baltimore, slows for late morning traffic and speeds up again, rattling over cobblestones.

But inside a handful of WiMAX-equipped notebook computers remain linked to Sprint's Xohm ("zome") network, showing consistent and unprecedented broadband wireless download speeds ranging from 3.7M to 5Mbps on the downlink and 1.8M to 2.6Mbps on the uplink.

On a flat-panel screen mounted at the rear of the van, the movie "Men in Black" streams from the Hulu.com video site without a flicker or blur, even as the van cruises through multiple handoffs between some of the 182 (and counting) WiMAX towers that blanket about 75% of the city.

As a demonstration of what WiMAX and Xohm, the first large-scale mobile WiMAX network in the United States, is delivering, the van ride is dramatic.

In a nearby townhouse, a laptop plugs via Ethernet cable into a XyXEL WiMAX router, coupled with a massive Samsung flat-panel screen showing Internet news sites and streaming video in the living room. In the kitchen overlooking part of Baltimore harbor, two laptops show a side-by-side speed-test comparison of Sprint's 3G network and Xohm: 678Kbps down, 520kbps up for 3G; 4.2Mbps down, 1.3 Mbps up for WiMAX.

Xohm's target

As dramatic as the van ride was, it's the combination of residential wireless Internet access and nomadic laptop-based computing that will likely be the initial attraction for Xohm, which executives billed as the first 4G network in the United States.

"Xohm targets both segments [nomadic and fixed residential], and that's a powerful differentiator for WiMAX, because you cannot do this in a scalable way with 3G," says Monica Paolini, president of Senza Fili Consulting, a wireless consultancy. "Xohm basically supports what subscribers perceive as two services, primary, fixed home broadband and nomadic or mobile access, within a single network and, for subscribers, a single contract."

That target was underscored during a press conference last week, which featured a variant of the traditional ribbon-cutting ceremony: Barry West, Xohm president and CTO, posed with a two-handed lopping shears to cut through a blue Ethernet cable as cameras flashed. "How about a special one for Verizon?" he joked, to another round of camera flashes, and then snipped through the cable.

The network, with Samsung base stations, officially went live on Sept. 29.

Eventually, the network will have just more than 300 base stations, with picocells to fill in outdoor coverage holes, according to Atish Gude, Sprint senior vice president for mobile broadband operations. Each cell has been portioned into three sectors, with enough spectrum available to create three non-overlapping channels, which minimize interference.

(For the Baltimore press event, Sprint set up a WiMAX "cell site on wheels" on a nearby rooftop. A spokesman said it was standard procedure for special events drawing additional users and traffic.)

Cultivating client devices

But last week, Sprint focused on the devices and users that this network will support. Onstage with West were Sprint CEO Dan Hesse, Intel Chief Sales and Marketing Officer Sean Maloney, and executives from nearly a dozen device makers, covering PCMCIA cards, customer-premises gear, four notebook makers (Acer, Asus, Lenovo and Toshiba, all showing models with embedded WiMAX radios), and Nokia, which was featuring the WiMAX edition of its N810 Internet Tablet.

But this first crop of devices, and the demonstrations designed around them, shows Sprint's initial focus on marketing Xohm as an all-IP data network that can be accessed anywhere there's coverage. "Xohm will extend your home and office [computing] environment, wherever you are," West says. "It will change the way the Internet is accessed."

Eventually, maybe. But Xohm's network, and much of its marketing, is aimed at trading on the familiar way nomadic laptop users today access the Internet: sitting down in range of a radio, opening their laptop, and finding a signal.

What's new is being able to eventually do this anywhere in Baltimore. But until a new crop of mobile devices emerge, Xohm's mobile WiMAX remains a service for nomadic users and fixed applications.

Nokia's N810 Internet Tablet is part of the emerging class of mobile Internet devices, which are smaller, lighter and easier to use on the go than conventional laptops, and most of all, much less expensive. The WiMAX version, available this month, will cost less than \$500, a slight premium over the original device. But Nokia has no definite plans at this point for future WiMAX-enabled products, either as part of the tablet family or other product lines. "It's still being looked at in terms of other form factors," says Pamela Ryan, director of business development, for Nokia's customer and market operations group.

One key development in user adoption may be the availability of ZTE's Xohm-branded TU25 USB WiMAX modem later this year, which could connect any device with a USB port to

Xohm (ZTE and ZyXEL also offer WiMAX customer premises equipment). Studies have shown the vast majority of users have a very strong preference for USB-based connectivity compared with more traditional PCMCIA cards, according to Sprint's Gude.

Technology as cost-cutter

Beyond connectivity, Xohm's WiMAX infrastructure has another purpose: to dramatically lower the cost of providing service, and provisioning subscribers. "We're taking out costs to make wireless broadband affordable," West says. "3G showed that customers want [mobile] broadband. But they want it as a price they can afford."

West reiterated his long-standing argument that WiMAX enables broadband wireless for a fraction of the cost of 3G cellular technologies. "Your racks, towers and all the rest are the same [in cost], but now you're pumping 10 times the bits through them," he says. He predicts that WiMAX chipsets will soon reach the \$3-to-\$15 range, only slight more expensive than Wi-Fi chipsets today. That's important because equipment makers can embed WiMAX into a growing range of equipment for only a relatively small additional cost.

Coupled with this is Xohm's provisioning model for subscribers, using a variety of channels but relying heavily on the Web. At every point, the company has tried to squeeze out costs. Xohm doesn't have mandatory service contracts or cancellation fees. According to the company, you can buy any WiMAX-enabled device, connect to the Xohm Web site, select a plan, charge it to your credit card and get online.

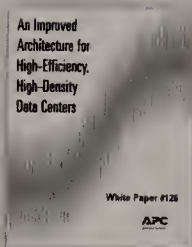
Xohm offers home wireless Internet access for \$25 a month; a mobile access service ("on-the-go") for \$30 a month; and a \$50 monthly service that lets you use two WiMAX clients on one account. A day-pass plan charges \$10 for 24 hours of access, which Xohm sees as a way for users to try out the network. ■

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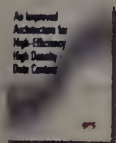
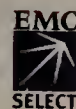
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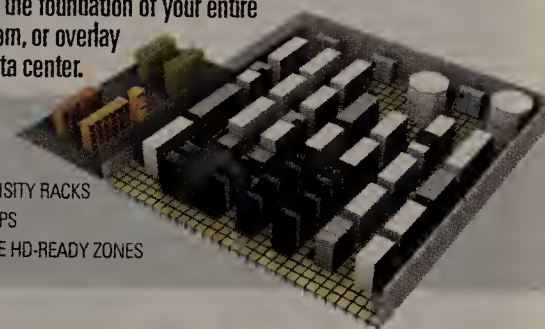


Figure 1

Efficiency and Virtualization

Your servers are efficient, but is your power and cooling?

- COOLING USAGE/CAPACITY
- SERVERS
- POWER USAGE/CAPACITY

Pre-Server Virtualization

Big gains could be made with both server and power and cooling.

- ☐ Correct Server Utilization
- ☐ Correct-sized Power
- ☐ Correct-sized Cooling



Post-Server Virtualization

Grossly oversized power and cooling cancels out potential gains made by virtualizing.

- ☒ Correct Server Utilization
- ☐ Correct-sized Power
- ☐ Correct-sized Cooling



Server Virtualization with Power and Cooling

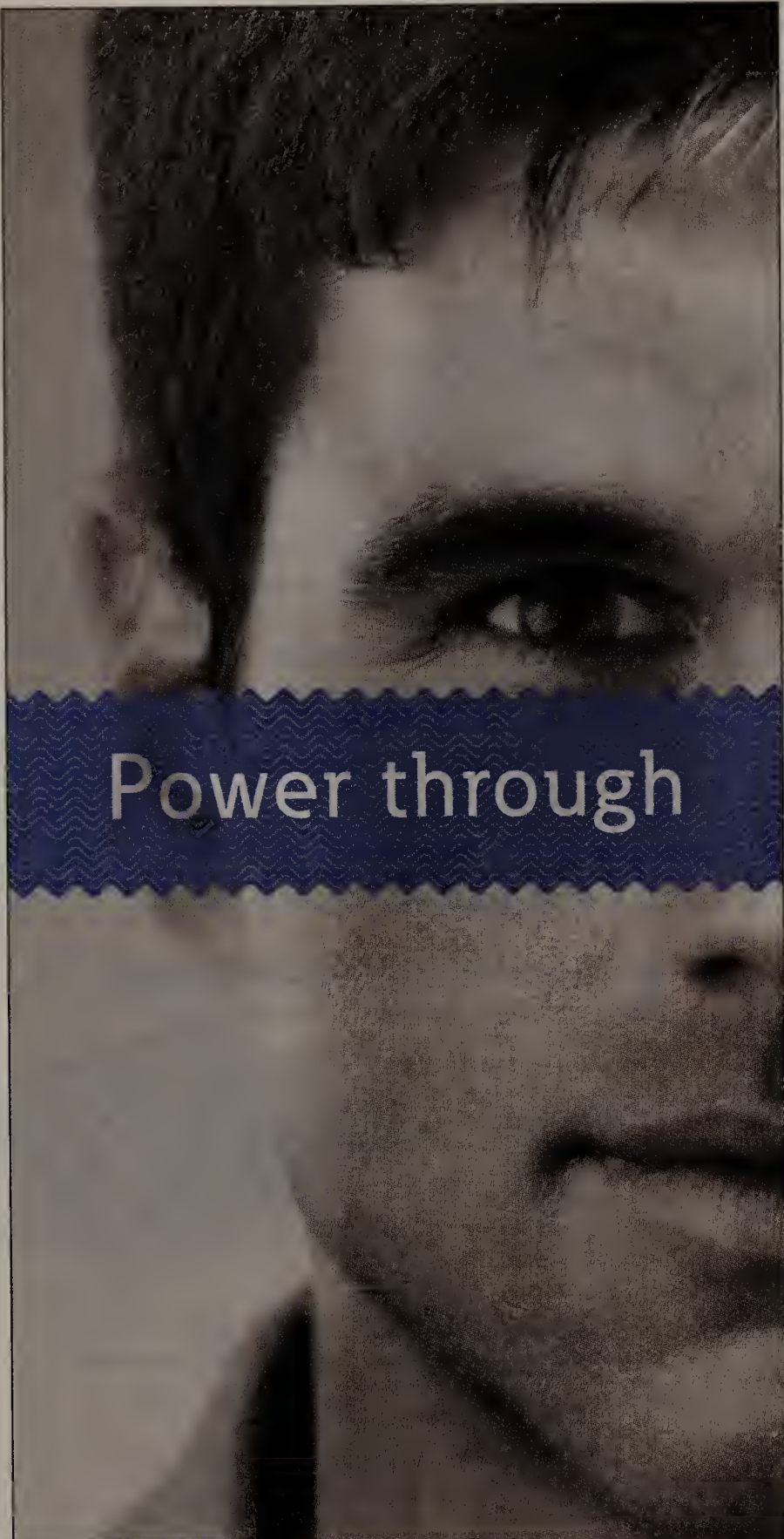
Right-sized power and cooling tip the balance back in your favor.

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- ☒ Correct-sized Cooling



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NEWS ANALYSIS

Symantec to buy MessageLabs

BY JEREMY KIRK, IDG NEWS SERVICE

Symantec will pay \$695 million for MessageLabs, a security vendor that offers a hosted spam and Web traffic filtering service.

MessageLabs offers its software-as-a-service (SaaS) as a monthly subscription. The filtering is performed within the company's 14 data centers located around the world.

It also can route a company's Web traffic through its filters to block potentially harmful Web sites as well as scan instant messages.

SaaS has been increasingly popular with businesses because it frees administrators from installing software upgrades and performing other maintenance tasks they would have to do in-house. MessageLabs' subscribers turn over the management of their e-mail and Web traffic security to the company and do not have to install on-site equipment.

For Symantec, the acquisition of MessageLabs gives it an alternative e-mail security offering to BrightMail, the company's antispam and antivirus appliance.

"We think the opportunity to expand our footprint in the rapidly growing software-as-a-

service market is significantly enhanced by this team becoming part of Symantec," says Symantec CEO John Thompson.

MessageLabs' service will be integrated into the Symantec Protection Network, an online-based backup, data restoration and remote access service launched in April 2007 for small to midsize businesses. Symantec will put its Protection Network services within MessageLabs' data centers.

SaaS focus

Symantec also says it is going to create a specific SaaS-focused product group. Adrian Chamberlain, CEO of MessageLabs, will lead the team and report to Enrique Salem, Symantec's chief operating officer.

MessageLabs has about 19,000 clients worldwide. The company reported \$145 million in revenue for its fiscal 2008 that ended July 31. The revenue figure is 20% more than in fiscal 2007.

Symantec officials say that two-thirds of MessageLabs' customers are in Europe.

The deal, expected to close by the end of December, is subject to approval by regulators. ■

RAPID RISE IN HOSTED SECURITY

MessageLabs holds a 29.7% share of the hosted security services market, followed by Google, which owns Postini, at 18.7% and Microsoft at 8.7%, according to Symantec. Before this acquisition, Symantec held just 1.1%.

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Will Apple be forced to make more money?



NET INSIDER

Scott Bradner

I still have not bought an iPhone. I expect I will do so soon though now that there is at least one good SSH client available through the Apple App Store. But I've been put off by reports about the poor quality of AT&T's wireless network and, to some degree, by the apparent capriciousness of Apple's decision-making process regarding what applications can be made available through the App Store. These issues have delayed my purchase. But I expect that they have been a deal killer for quite a few people.

At first the lock-in deal with AT&T made sense to me. Apple's agreement with AT&T includes Apple receiving a share of the revenue the carrier gets from iPhone subscribers — a nice deal indeed. But Apple does not have any such deal about iPods and seems to be doing just fine selling a much less expensive device. Now I'm not so sure that the iPhone lock-in is a good thing for Apple — it clearly is not a good thing for anyone else: Customers cannot choose the carrier that provides the best service, and AT&T's competitors cannot sell the iPhone.

Because the iPhone is a GSM device it is not compatible with Verizon's or Sprint's networks, but just having a T-Mobile option could help some customers. What's more, having an option of swapping SIM cards with a local provider when traveling out of the country would be a very big win considering AT&T's unconscionable international roaming charges.

Apple could sell a lot more iPhones if they were not tied to specific carriers.

The value of the iPhone would also be higher if Apple did not block some of the applications it has from the App Store. Some filtering is needed to be sure that applications will not kill the iPhone or the phone network. But blocking applications that compete with Apple's own does no one good in the long run — customers do not get alternatives and Apple has less of an incentive to produce better applications.

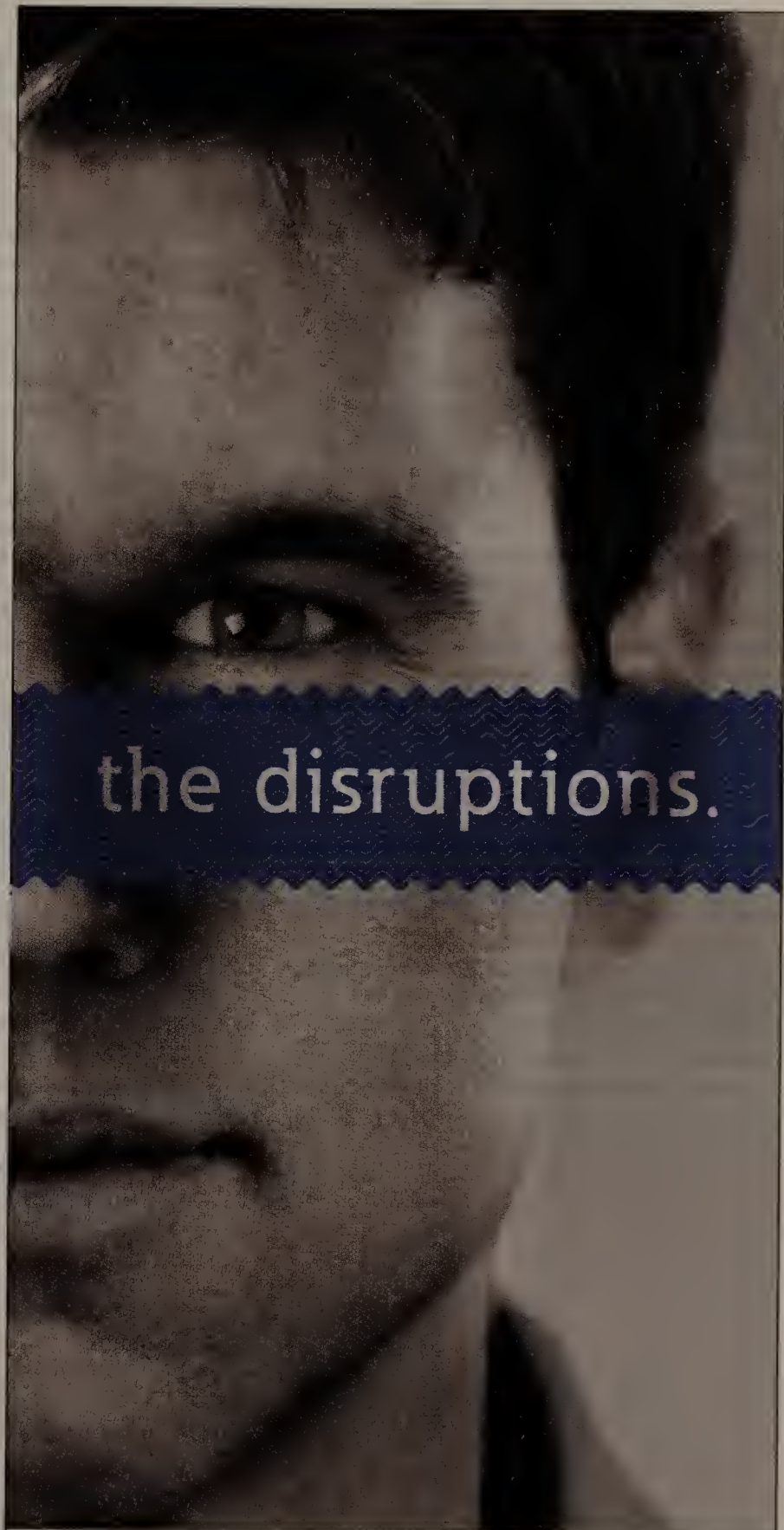
Speaking of unconscionable, that is just what a court has ruled that some of the terms of the AT&T iPhone user agreement may be. The same court has ruled that Apple and AT&T may have violated the Sherman Antitrust Act when they had a secret agreement that locked customers in for five years, three years past the two-year agreements that customers thought they were signing. The court ruled that Apple may have violated the same law by limiting the market for iPhone applications to those available through the App Store. In addition, the court ruled that Apple's decision to permanently disable unlocked iPhones with its Version 1.1.1 update may have also violated the law.

I say "may have" because the court refused to rule that the charges made by the people suing Apple and AT&T should be dismissed. The next step will be discovery, where Apple and AT&T will have to produce mountains of documents detailing just what they have been doing.

This case has hardly started, but one possible outcome could be that Apple is told that it cannot have the kind of restrictive agreement it has with AT&T and has to open up the iPhone for more third-party applications. I expect that Apple, but not AT&T, will benefit considerably if this happens — as will consumers (and, of course, the lawyers).

Disclaimer: Lawyers making money is good for the endowment of the Harvard Law School but I know of no Law School position on the iPhone case or if it's a good idea to force Apple to make more money. So the above is my own opinion.

Bradner is Harvard University's technology security officer. He can be reached at sob@sobco.com.



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Ellison hypes Oracle's data warehouse appliance



ABOVE THE CLOUD

James Kobielus

The high-end data warehousing wars are fast upon us. Vendors are launching ever more scalable DW solutions. And they're delivering them with more aggressive — and slippery — performance claims.

The DW industry's new battlefield is petabyte scalability. This

refers to a DW platform's ability to ingest, store, process and deliver an order-of-magnitude more data than today's typical terabyte-size warehouses. In this regard, the competitive high ground is still held by Teradata, which recently released a high-end, shared-nothing, massively parallel processing (MPP) DW appliance that can scale to 10 petabytes across as many as 1,024 compute/storage nodes.

Oracle and HP recently joined the petabyte battle with all guns blazing. At Oracle's annual OpenWorld conference, they jointly announced general availability of a petabyte-scalable DW appliance: the HP Oracle Database Machine, which includes the HP Exadata Storage Server. They touted its "extreme" performance and scaling features, bolstering those claims through public demos and beta-tester testimonials.

Most significantly, they enlisted Oracle CEO Larry Ellison and HP honchos Mark Hurd and Ann Livermore to unveil the offering from the conference's main stage.

Clearly, the HP Oracle Database Machine is highly strategic for both companies. It provides a platform for Oracle to sell more database licenses and for HP to sell more server and storage hardware. It will almost certainly get the partners onto vendor short lists for petabyte-scale DW solutions, which are increasingly being deployed in such vertical markets as telecommunications, government and financial services.

It also helps them blunt the momentum of DW appliance up-and-comer Netezza, whose platform, like the Oracle/HP offering, performs SQL processing in an intelligent storage layer, thereby accelerating queries and table scans against very large data sets.

There's no question that the recent Oracle/HP announcement was substantial and has shifted the competitive dynamics in the high-end DW market. But it was also an exercise in marketing hype. Predictably, it triggered an immediate firestorm of heated retorts from aggrieved competitors.

In the fog of war, the first casualty is perspective, and that's certainly the case in this competitive fracas. Buyers of DW solutions should exercise extreme caution when evaluating the Oracle/HP solution vis-à-vis comparably scal-

able offerings from Teradata, Sybase, Greenplum, IBM and others. You'll definitely need to apply the standard caveats to Ellison's bold price/performance claims. And considering that Ellison was employing the native marketing speak of the DW arena, you'll need to apply the same grains of salt to his competitors' tales.

For starters, Ellison studded his talk with what might be regarded as the "virtuous coefficients" of DW performance enhancement: 10x, 20x, 30x, 40x, 50x, as high as 72x speedups have been documented by beta testers of the HP Oracle Database Machine. Of course, every DW professional knows that these performance boosts are extremely sensitive to myriad implementation factors, such as what you put in a SQL "where" clause, how many table joins you perform, whether and how you compress the data and so forth.

The performance enhancements also are relative to whatever DW configuration — well-engineered or otherwise — the beta testers had implemented prior to getting their hands on this shiny new uber-appliance. Note the tag line near the end of Ellison's presentation (emphasis added): "10-50x faster than current Oracle data warehouses."

Also, Oracle's big boss hammered Teradata and Netezza with benchmarks that were ostensibly apples-to-apples. However, Ellison's presentation seriously lacked the detailed footnoting necessary to ascertain that he was indeed comparing his product against comparably configured instances of rival offerings that were processing comparable workloads.

But even without aid of a magnifying glass, it was clear that Ellison was comparing his appliance directly to the Teradata 2550 and Netezza 10100 on the basis of a single common-denominator, configuration-wise: They all have a one-rack footprint. That's an odd basis for comparison. Those competitors do in fact have higher-end DW-appliance models, with more capacity, that might serve as a better basis for performance and price comparisons, but Oracle chose to overlook that fact. Why did it size up a 168-terabyte Oracle/HP machine against 43-terabyte offerings from Teradata and Netezza respectively?

Furthermore, Oracle somehow failed to benchmark these same solutions on the full range of performance criteria that matter in DW and business intelligence deployments, such as query response times, concurrent usage, mixed workload support, load speed and transaction throughput. Even if Oracle had provided reliable, unbiased, third-party benchmarks, it would have been useless if the company didn't test against comparably configured Teradata and Netezza offerings.

And the price-comparison chart was also seriously deficient. Most notably, the HP Oracle Database Machine's overall price, as

presented by Ellison, lacked the requisite Oracle Database Real Application Cluster license fees. However, the stated prices for the Teradata and Netezza solutions definitely included the database management systems (DBMS) that come configured into those offerings (though Netezza has a free open source database, PostgreSQL, at the heart of its offering). So when you factor in all relevant costs, the new HP Oracle Database Machine doesn't look quite as attractive on the common-denominator of acquisition price per usable terabyte of production data.

Finally, Ellison, like most DW vendors, implicitly presented his solution's architectural approach as the gold standard against which all others must be disparaged. That, of course, is a highly debatable proposition.

For one thing, Oracle Database 11g — the software heart of the appliance — is still a general-purpose relational DBMS that has one foot in DW but another solidly planted in online transaction processing (OLTP). By contrast, Teradata, Sybase, Netezza, Greenplum and others have optimized their DBMSs for DW from the get-go, and do not support OLTP.

Also, Oracle's appliance implements a shared-disk storage-area network architecture. By most accounts, shared-disk approaches are inherently less scalable than the shared-nothing MPP approach at the heart of DW solutions from, among others, Teradata and Greenplum.

And the Exadata storage layer can only parallelize SQL queries, and only against structured relational data. In its present incarnation, the Exadata storage grid cannot be used to execute a wider range of analytic functions or handle unstructured and semi-structured data types. Consequently, it is not applicable to the new generation of "content DWs" or for any of the in-database analytics that might be applied to the myriad nonrelational data types that reside in those warehouses.

Ellison didn't go into anywhere near this degree of industry context. His job is to sell the world on an important Oracle product and partnership, and he did so quite well. We shouldn't expect his direct competitors to be any more frank about their respective DW solutions' limitations.

Sorting through the field of high-end DW solutions is getting more difficult, due to the diversity of vendor approaches. IT professionals need to read between the lines of DW vendors' increasingly breathtaking product announcements before deciding if Oracle, HP or any other solution provider is truly breaking new ground.

Kobielus is a senior analyst at Forrester Research in Alexandria, Va. The opinions expressed are his own. E-mail him at jko-kobielus@forrester.com.

Telecom planning in a time of turmoil



EYE ON THE CARRIERS
Johna Till Johnson

It's gotten pretty hard to miss the financial news lately: September was the worst month for stocks in years, and October looks to surpass it. Despite the U.S. government's massive \$700-billion bailout, the U.S. economy is still roiling, and Europe's is doing even worse.

With all this gloom and doom abounding, if you're a telecom manager you may be wondering about how all this will affect you — and what decisions you can make to ensure your company's safe over the long haul. Here is an FAQ:

Will I still have a job tomorrow/next week/next month/next year?

Probably. If you're in your late 20s or older, you probably recall the dot-com debacle. For the economy at large, this crisis is worse, but for those of us in the tech/IT sector, it's not as bad. First, CIOs have been cautious in increasing the size of their tech staffs over the past few years — so there are fewer “redundant” positions. Second, not as many tech-heavy companies have been hit. Yes, if your former employer was Lehman, Bear Stearns or a mortgage broker, you're probably out looking for a job. And if you're working in finance, real estate or insurance, you should build out a Plan B. But for everyone else, the chances are your company (and very likely your job) will survive the downturn.

How does this affect my telecom providers?

Keep in mind the credit-worthiness of the providers you're doing business with. Financial analysts Sanford Bernstein recently looked at AT&T and Verizon and concluded they're probably OK. Of the three U.S. players, Sprint is at greatest risk. When it comes to smaller players, things are iffier — but that doesn't mean you should categorically back off from using these companies, which can offer services that enable you to gain competitive advantage. Just make sure you bring someone from your finance department to review the new provider to determine the level of risk. Look for the level of debt, and eschew providers with high debt loads. (Sanford Bernstein finds the cable companies potentially interesting, if the debt loads are correct.)

How does this affect the types of contracts I should sign?

Go for managed services wherever possible. Here's why: During a credit crunch, the less you spend on capital equipment (routers, firewalls) the better. Managed services are, in essence, a way for the carriers to assume the capital costs of your gear. Because the chances are that Verizon and AT&T are bigger than your company, they have greater access to capital (and more favorable terms). So your best bet is to have the carriers assume the capital costs for the gear, so your company can conserve its resources. Finally, make sure you give yourself plenty of “outs” — opportunities to exit the contract without termination penalties.

The bottom line? No need to panic, but it's wise to keep the financial situation in mind when negotiating contracts.

Johnson is president and senior founding partner at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.

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Modular data centers catching on

But experts question energy efficiency claim

BY JON BRODKIN

Interest in modular data centers is growing, fueled by high-profile endorsements from Microsoft and Google. But the model raises new management concerns, and efficiency claims may be exaggerated.

Modular, containerized data centers being sold by vendors such as IBM, Sun and Rackable Systems fit storage and hundreds, sometimes thousands of servers into one large shipping container with its own cooling system. Microsoft, using Rackable containers, is building a data center outside Chicago with more than 150 containerized data centers, each holding 1,000 to 2,000 servers. Google, not to be outdone, secured a patent last year for a modular data center that includes "an intermodal shipping container and computing systems mounted within the container."

To hear some people tell it, containerized data centers are far easier to set up than a traditional data center, easy to manage and more power-efficient. It should also be easier to secure permits, depending on local building regulations. Who wouldn't want one?

If a business has a choice between buying a shipping container full of servers, and building a data center from the ground up, it's a no-brainer, says Geoffrey Noer, a vice president at Rackable, which sells the ICE Cube Modular Data Center.

"We don't believe there's a good reason to go the traditional route the vast majority of

the time," he says.

But that is not the consensus view by any stretch of the imagination. Claims about efficiency are over-rated, according to some observers.

Even IBM, which offers the Portable Modular Data Center and calls the container part of its green strategy, says the same efficiency can be achieved within the four walls of a normal building.

IBM touts a "modular" approach to data center construction, taking advantage of standardized designs and predefined components, but that doesn't have to be in a container. "We're a huge supporter of modular. We're a limited supporter of container-based data centers," says Steve Sams, vice president of IBM Global Technology Services.

Containers are efficient because they pack lots of servers into a small space, and use standardized designs with modular components, he says. But you can deploy storage and servers with the same level of density inside a building, he notes.

Container vendors often tout 40% to 80% savings on cooling costs. But according to Sams, "in almost all cases they're comparing

a highly dense [container] to a low-density [traditional data center]."

Containers also eliminate one scalability advantage related to cooling found in traditional data centers, according to Sams. Just as it's more efficient to cool an apartment complex with 100 living units than it is to cool 100 separate houses, it's more cost-effective to cool a huge data center than many small ones, he says. Air conditioning systems for containerized data centers are locked inside, just like the servers and storage, making true scalability impossible to achieve, he notes.

Gartner analyst Rakesh Kumar says it will take a bit of creative marketing for vendors to convince customers that containers are inherently more efficient than regular data centers. Gartner is still analyzing the data, but as of now Kumar says, "I don't think energy consumption will necessarily be an advantage."

Finding buyers

That doesn't mean there aren't any advantages, however. A container can be up and running within two or three months, eliminating lengthy building and permitting times. But if you need an instant boost in capacity, why not just go to a hosting provider, Kumar asks.

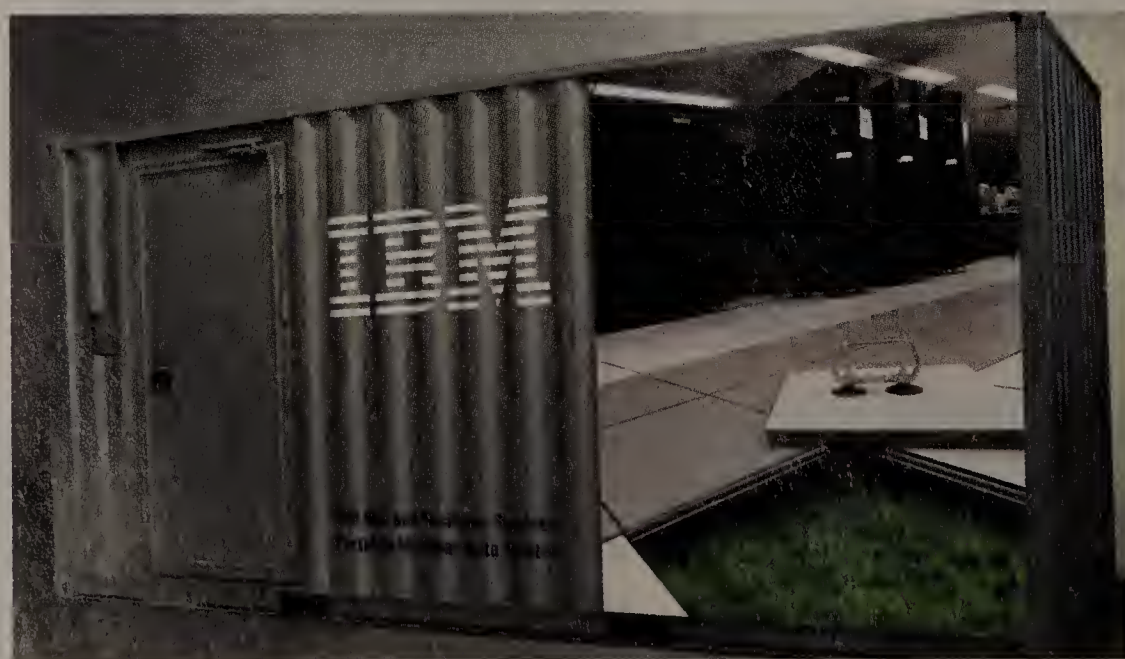
"We don't think it's going to become a mainstream solution," he says. "We're struggling to find real benefits."

Kumar sees the containers being more suited to Internet-based, "hyperscale" companies such as Google, Amazon and Microsoft. Containerized data centers offer scalability in big chunks, if you're willing to buy more containers. But they don't offer scalability inside each container, once it has been filled, he says.

Container vendors tout various benefits, of course. Each container is almost fully self-contained, Rackable's Noer says. Chilled water, power and networking are the only things from the outside world that must be connected to each one, he says. Rackable containers, which can be fitted with as many as 22,400 processing cores in 2,800 servers, are watertight, fitted with locks, alarms and LoJack-like tracking units. Sun's Modular Data Center can survive an earthquake — the company made sure of that by testing it on one of the world's largest shake tables at the University of California in San Diego.

A fully equipped Rackable ICE Cube costs

See Data center, page 28



Rackable Systems' ICE Cube portable data center can be fitted with as many as 22,400 processing cores in 2,800 servers.

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In Their WORDS

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OVERVIEW: Network Instruments® is the industry-leading developer of distributed and affordable network management, analysis and troubleshooting solutions. The award-winning Observer® family of products provides integrated monitoring and management for the entire network.

CHALLENGE: Central DuPage Hospital, the second busiest surgical center in Illinois, recently implemented several major initiatives including a significant VoIP deployment, telemetry patient monitoring system, and a Computerized Physician Order Entry (CPOE) system.

Central DuPage lacked adequate tools to manage network, application, and connectivity issues associated with a recent VoIP implementation and expansion of critical network applications.

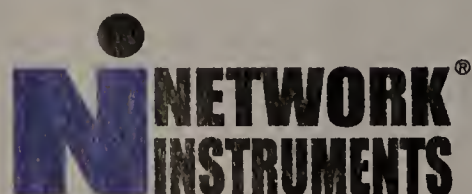
SOLUTION: Central DuPage used Observer® Expert to conduct network assessments and benchmark performance before implementing VoIP. Observer remains crucial in monitoring VoIP phones and wireless communications between doctors, nurses, hospital staff, and patients.

"We didn't have adequate analysis tools to manage network, application, or connectivity issues," said Jack King, director of IT. "We were in the middle of a significant VoIP deployment and had plans for implementing other critical applications. We needed an analyzer to monitor and maintain performance."

They used Observer Expert to conduct network assessments, ensuring a successful VoIP deployment.

"Network Instruments provides us complete visibility into everything on our network," said King. "Visibility is critical for us being able to quickly identify and troubleshoot issues before they impact performance. Locating problem causes without Observer Expert would be like trying to find a needle in a haystack in the dark."

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Data center

continued from page 24

several million dollars, mostly for the servers themselves, Noer says. The container pays for itself with lower electricity costs as the result of an innovative Rackable design that maximizes server density, Noer says.

But it's still too early to tell whether containerized data centers are the way of the future. "We're just at the cusp of broad adoption," Noer says.

Potential use cases for containers include disaster recovery, remote locations such as military bases, or big IT hosting companies that would prefer not to build brick-and-mortar data centers, Kumar says.

A TV crew that follows sporting events may want a mobile data center, says Robert Bunker, director of business development for American Power Conversion. APC doesn't sell its portable data center, but in 2004 it built one into a tractor-trailer as a proof-of-concept. It was resilient. "We pulled that trailer all over the country" for demos, Bunker notes.

But APC isn't seeing much demand, except in limited cases. For example, a business that needs an immediate capacity upgrade but is also planning to move its data center in a year might want a container

because it would be easier to move than individual servers and storage boxes.

UC-San Diego bought two of Sun's Modular Data Centers. One goal is to contain the cost of storing and processing rapidly increasing amounts of data, says Tom DeFanti, principal investigator of the school's GreenLight energy efficiency research project. But it will take time to see whether the container approach is more efficient. "The whole idea is to create an experiment to see if we can get more work per watts," DeFanti says.

The Modular Data Center

is not as convenient to maintain as a regular computer room, because there is so little space to maneuver inside, he says. But "it seems to me to be an extremely well-designed and thought-out system," DeFanti says. "It gives us a way of dealing with the exploding amount of scientific computing that we need to do."

Beware vendor lock-in

Before purchasing a containerized data center, corporations should consider several issues related to their manageability and usefulness. Vendors often want you to fill the containers with only their servers, Kumar notes. Besides limiting flexibility at the time of purchase, this raises the question of what happens when those servers reach end-of-life. Will you need the vendor to rip out the servers and put new ones in, once again limiting your choice of technology?

"At the moment, most vendors will fill their containers only with their servers," Kumar says.

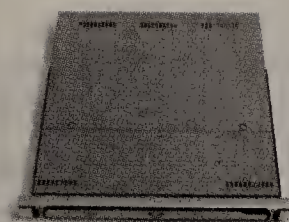
IBM, however, says it uses industry-standard racks in its portable data center, allowing customers to buy whatever technology they like. DeFanti says Sun's Modular Data Center allows him the flexibility to buy a heterogeneous mix of servers and storage. Rackable, though, steers customers toward either its own servers or IBM BladeCenter machines through a partnership with IBM.

"Vendors are learning that people want more flexibility," DeFanti says.

Another consideration is failover capabilities, says Lee Kirby, who provides site assessments, data center designs and other services as the general manager of Lee Technologies. If one container goes down, its work must be transferred to another. Server virtualization will help provide this failover capability, and also make it easier to manage distributed containerized data centers - an important consideration for customers who want to distribute computing power and have it reside as close to users as possible, Kirby says. ■



IBM uses industry-standard racks in its Portable Modular Data Center so customers can install gear from multiple vendors.



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Anatomy of a SQL-injection attack

BY RYAN BARNETT

While there are a number of security risks in the world of e-commerce, SQL injection is one of the most common Web-site attack techniques used to steal such customer data or destroy data outright.

A database's native tongue is Structured Query Language (SQL), which is essentially a set of command statements that instruct a database to execute actions. Every database server has a similar series of commands to query its tables, narrow down results to a few specific entries, and combine information from one table to another.

Here is an example SQL query:

```
SELECT * FROM users WHERE Email = "" +
Email + "" AND Password = "" + Password + "";
```

The WHERE specifies a condition, that an e-mail address and password combination match data present in the "users" table. When this command is given to the database server it returns a true if a match is found and a false if there is no match.

When clients send data on the Web, they use URLs and forms to assemble the query statements. The following URL is an example of a logon page for a Web application:

```
GET /shopping_cart/login.asp?Email=jdoe
@example.com&Password=$ecret123
HTTP/1.1
```

This URL shows that the destination application is a Microsoft ASP page and it is accepting two parameters, one called "Email" and the other called "Password." If the user credentials are correct, the result of this query will provide response data that represents a successful authentication and will be used to allow the client to proceed to the Web page.

Developers of traditional application code believe database queries come from a trusted source, the database server itself, rather than an untrusted user's Web browser. SQL injection is an attack technique where an untrusted user inserts SQL query data into input fields sent to back-end databases to trick the database into executing the commands (see graphic).

The Web-application firewall in the example was configured in a detection-only mode, where it was logging alerts and events but not blocking any inbound attacks or outbound data leaks. Because of this configuration, the inbound SQL-injection attack was allowed to continue on to the vulnerable Web application.

The Web page returned indicates that the SQL-injection reconnaissance probe was successful (see graphic), and gave the hacker valuable information, including the exact version of the database and the database user. Armed with this information, the attacker can attain more information about the database itself,

such as the table and column names. After a number of intermediary reconnaissance probes, the attacker has the information needed to send a complex SQL-injection attack in an attempt to extract customer-record details.

Criminals once had a tough time creating programs that could mass-exploit Web applications because most sites ran custom-coded applications. In early 2007, the game changed with the emergence of mass SQL-injection bots. These programs use a complex SQL script to inject generic data into vulnerable sites without previous knowledge of the database structure. They use multiple SQL commands to create a script that uses database features to gather, then loop through, table names and append malicious JavaScript that points to malware on a third-party site. The injected JavaScript is used dynamically within the HTML page presented to clients, and attempts to exploit Web-browser vulnerabilities to install a back door.

The Open Web Application Security Project Top 10 list includes excellent guidelines for mitigating injection-type attacks, including:

- **Input validation:** Use a standard input-validation mechanism to validate all input data for length, type, syntax and business rules before accepting the data to be displayed or stored; use an "accept known good" validation strategy. Reject invalid input rather than attempting to sanitize potentially hostile data.

- **Database configuration:** Use strongly typed, parameterized query APIs with place-holder substitution markers, even when calling stored procedures; and enforce least privilege when connecting to databases and other back-end systems. Use stored procedures carefully: Although they generally are safe from SQL injection, they can be injected via the use of `exec()` or concatenating arguments within the stored procedure. Do not use such dynamic query interfaces as `mysql_query()`.

- **Avoid detailed error messages.** These are useful to an attacker. SQL injection is the most widely used attack vector for professional cyberthieves, but defense-in-depth security measures — proper database configuration, secure coding within the Web application and deployment of a Web-application firewall — are extremely effective mitigation strategies.

Barnett is director of application security at Breach Security (www.breach.com).

Real multistep SQL-injection attack

A real-world multistep SQL-injection attack captured during incident response.

Figure 1. The first query

- 1 GET /shopping_cart/login.asp?Email='%20or%201=convert(int,(select%20@@version%2b'%2b@@servername%2b'%2bldb_name()%2b'%2b'system_user'))
- 2 --sp_password HTTP/1.1

1. The attacker is targeting an ASP log on page and injecting SQL into the e-mail parameter.

2. The SQL query is attempting to access global and local database variables, such as the server name.

3. The attacker is attempting to evade database audit-logging facilities by appending the "--sp_password" string, which tricks the database into not logging the transaction.

Figure 2. The attack succeeds

- 1 HTTP/1.1 500 Internal Server Error
Content-Length: 598 Content-Type: text/html
Cache-control: private Set-Cookie: ASPSESSIONIDCCQCSRQDQ=EHEPIKBBB
FLOFIFOBPCJDBGP; path=/ Connection: close

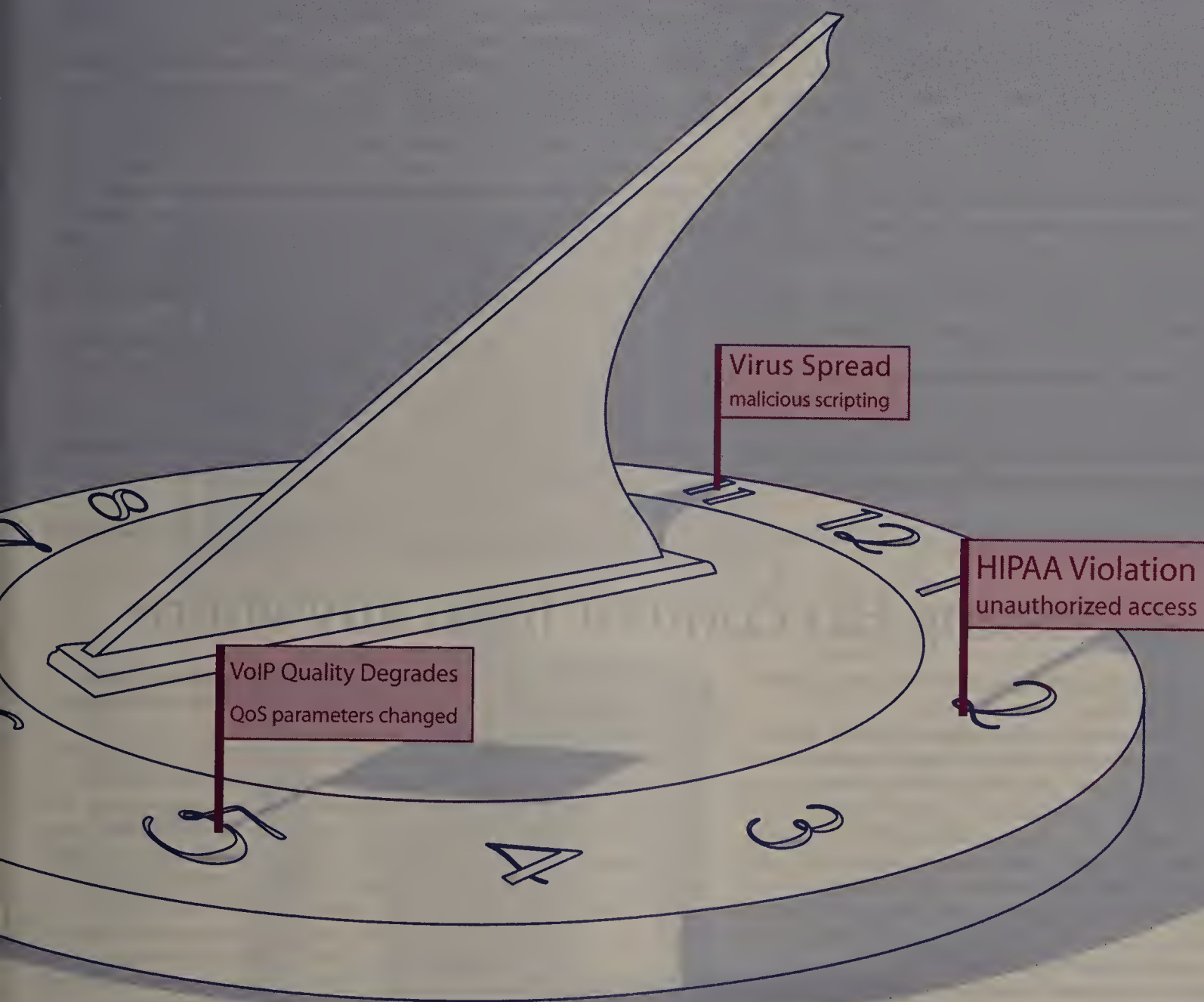
<p>Microsoft OLE DB Provider for ODBC
Drivers error
'80040e07'
<p>
[Microsoft][ODBC
SQL Server Driver][SQL Server]Syntax error
converting the nvarchar value 'Microsoft SQL
Server 2000 - 8.00.2039 (Intel X86) May 3
2005 23:18:38 Copyright (c) 1988-2003
Microsoft Corporation Standard Edition on
Windows NT 5.2 (Build 3790: Service Pack
1)/SHOPSQLOPT/OPTUSER' to a column of
data type int.
<p>
<font face="Arial"
size=2>/shopping_cart/login.asp<font
face="Arial" size=2>, line 49

1. This transaction generated an HTTP response-status code of 500, which indicates an error occurred.

2. The HTML in the response-body payload includes text that was generated by the back-end database.

3. The database error message dynamically included the successful results from the inbound SQL-injected query.

Turn back network time.



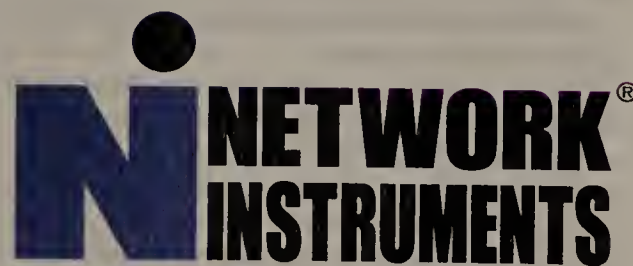
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GEARHEAD

Mark Gibbs

Backup DVDs that find your photos

Here's a neat idea: Verbatim has launched a backup system for photos that is embedded on Recordable DVDs. The product, called PhotoSave DVD, is for Windows 2000, XP and Vista.

Here's how it works. When you put a PhotoSave DVD in a drive that has autoplay enabled, the PhotoSave application stored on the DVD is launched. If you are wary of autoplay as I am, you'll have to launch the application manually. As PhotoSave is only 1.79MB it runs almost immediately on most systems.

Once loaded PhotoSave scans your drives and figures out how many image files you have and how much storage will be needed. You can let the program do its stuff or manually select what is to be backed up. Verbatim claims that PhotoSave recognizes more than 80 image file formats, but I can't find a list of these formats anywhere.

What was remarkable was how fast PhotoSave finds images — less than about 15 seconds to find 6,392 images totaling 10.9GB on a two-drive, 1.8GHz P4 Windows XP Professional system with a total of 183GB of used disk space. This makes me wonder how PhotoSave can do that task so fast when the same operation would take Windows Explorer at least 15 minutes to do. Anyone? Microsoft?

The first time I tried to perform a backup PhotoSave reported it would require three discs to back up all the images I found — no problem, the discs come in three packs so I told it to do its thing.

I came back an hour later and PhotoSave reported that operation had been cancelled but I have no idea why. When I restarted the application it said a data-recording session had been saved on the DVD but it showed no files. You'd think that an empty session would be handled a little more skillfully because there's a limit of three sessions per disk. I

did get the PhotoSave system to work on the next try and everything went fine the second time around.

The things I'd fault PhotoSave on are no support for OS X or Linux, no incremental backup and no file recovery service (you have to go to the disks and find the files you want to recover).

Another issue is PhotoSave's ugly behavior when you cancel an operation. For example, if you cancel a backup you get spurious warnings about missing files, or PhotoSave creates a backup of the files found up to the moment you cancelled, which wastes a session. Gentlemen of Verbatim, "cancel" means stop what you're doing, not go ahead with whatever you've got even if it's not what I want.

All that notwithstanding, this is an interesting idea for your users who need to do backups where you aren't in a position to manage it for them — for example, field workers using digital cameras and working with images on laptops. As these discs are write-only there's a good chance your users won't wipe out their backups.

A nice idea and definitely useful, but limited and a little unpolished. I'll give PhotoSave 3 out of 5. A three pack of PhotoSave disks costs \$9.99.

Finally, a follow-up from reader Glen Klitz who came across my columns about the mysterious surge in deferred procedure calls that my Windows XP system experienced. Glen is seeing exactly the same problem on a white box with a 1.53GHz Athelon XP1800 with 608MB of RAM running Windows XP SP3 OEM (I had a 1.8GHz Pentium with 1GB of RAM running Windows XP Professional SP2).

As I told Glen, I never found the cause and the problem went away as mysteriously as it had arrived. I'm still waiting for one of you geniuses to pull the rabbit from the hat on this one.

Gibbs thinks tricks are for techs in Ventura, Calif. Serialize your thoughts to gearhead@gibbs.com.



Keith Shaw

COOLTOOLS

Accessing HD content from anywhere

The scoop: Slingbox Pro-HD, by Sling Media, about \$300.

What it is: Like the original Slingbox, the new high-definition version is a small appliance that connects to your TV and home network to let you stream TV content across the LAN or the Internet. With the included SlingPlayer software, you can watch a Boston Red Sox game on your laptop when you're in a San Francisco hotel

room, for example. The new Slingbox version takes advantage of set-top boxes with high-definition content, allowing you to stream those channels across the LAN and Internet also. With multiple connection options (composite, S-Video or component video inputs), the device can stream video from several sources, including a cable set-top box (basic or high-definition), a digital video recorder, Apple TV, DVD Player, satellite receiver or a video security camera.

Why it's cool: The new box and SlingPlayer software improves video quality when streaming content, and a live video buffer lets you pause, rewind or fast forward up to 60 minutes of content, creating a DVR-like experience. A very colorful TV listings guide and the SlingRemote feature looks and acts just like your real remote control sitting at home, making it extremely easy to change channels. A very nice optimization feature detects your network settings and adjusts the bandwidth stream for the best available video and audio. On the home LAN, I was able to get up to 6Mbps of band-

width streaming at times, making for a very nice in-home experience — for example, being able to watch TV in a home office on the laptop where no TV connection exists.

Some caveats: The biggest downside is the limitations of your broadband connection. Most broadband connections offer lots of download bandwidth (my system offers 6Mbps downloads at times) but very limited upload bandwidth (I'm lucky if I get more than 500Kbps). Sling Media suggests that the best viewing experience comes with more than 800Kbps upload, with "better" ranging from 400K to 800Kbps, and "good" between 256K and 400Kbps. In testing with my 400K to 500Kbps connection, the high-definition content is nearly impossible to view remotely;

you get a smaller screen and resolution. That criticism may be moot — when you're remote and watching a game, just watching the game is good enough.

Another issue: If your router isn't located near the Slingbox (where you can run an Ethernet cable), connecting involves trying to use a powerline bridge or a wireless Ethernet bridge. In testing, I tried two separate adapters, and had trouble with in-home streaming. Then I turned to the SlingLink Turbo (a \$150 four-port unit near the Slingbox and an \$80 one-port unit next to my router) powerline adapters. Once these were connected, my streaming flew — it was worth the extra cost.

Grade: 3 stars (better if you have great upload speeds at home).



The Slingbox Pro-HD and SlingPlayer software let you watch HD TV on your laptop.

Shaw can be reached at kshaw@nww.com.

Four steps to application

nirvana

Survey shows that following best practices for application performance management is key to boosting app effectiveness



BY PETER SEVCIK AND REBECCA WETZEL, NETFORECAST

Good application-performance management is about people and process.

Many companies start down the APM path by investing in management products and stop there. NetForecast's research, however, shows the biggest performance bang for the buck comes from investing in people who implement APM best practices.

NetForecast recently completed a benchmarking survey of 300 enterprises and their APM practices and results. Here's what we found:

- Enterprises investing the most in good practices more than double application-performance effectiveness compared with those investing the least.
- In particular, such enterprises experience a more than 300% improvement in their ability to solve problems quickly, and a nearly 150% improvement in their ability to learn about problems proactively rather than through user complaints. In addition, they are twice as likely as those investing the least to assess response times favorably for their important applications.
- This year's results show a 10% overall improvement in benchmark scores compared with last year, indicating that enterprises are doing a better job of implementing best practices.
- In addition, ITIL's IT Service Management (ITSM) framework is gaining popularity, while the FCAPS (standing for fault, configuration, accounting, performance and security) framework is on its way out.

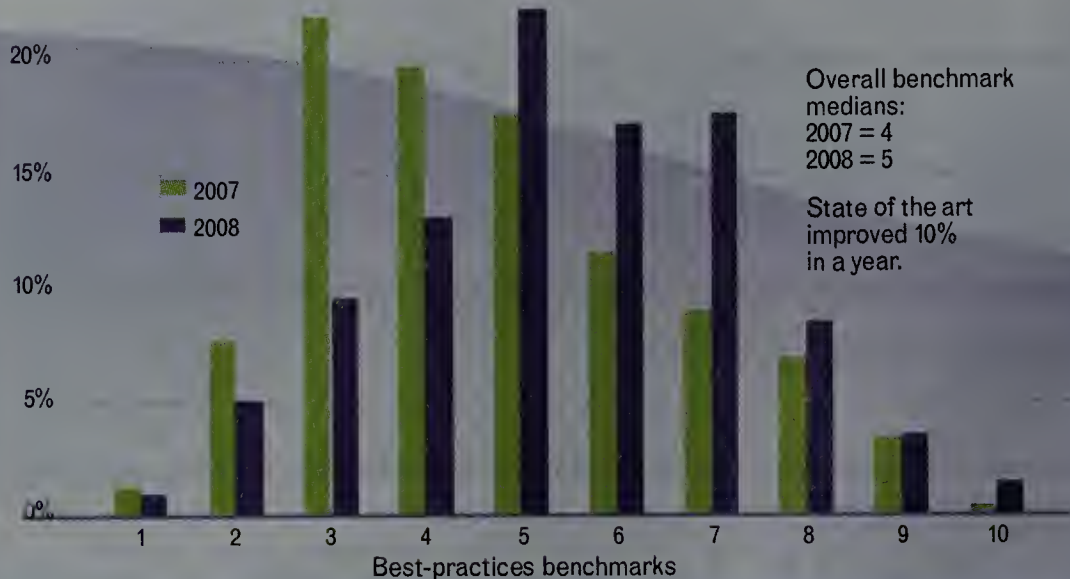
Four steps to APM best practices and benchmarking

When all is said and done, what matters is how users experience an application: Can they reach it, and once there, can they remain productive? Good APM optimizes application availability and response time, and best practices help make that happen.

Best practices harness human behavior, education, relationships and communication to understand, measure and communicate about application performance — as well as to link this performance to the business. These best practices must be embedded into a continuous improvement process that ensures application performance meets your business needs.

Application performance management best practices are on the rise

Survey results show that the median benchmark score (which tallies how well companies are deploying best practices) increased by 10% overall between 2007 and 2008. The median score is still 5 out of 10, meaning there's plenty of room for improvement.



This process begins by understanding your users' and application needs, gathering (and measuring) relevant performance data, and reporting (or communicating) that data in understandable form to the right people.

The reports serve as input for IT and business groups to collectively determine what measurements and thresholds best support the business.

Here are the four best practices and some examples of what they entail:

1. Understand:

- Define which technical parameters are important.
- Establish which applications are mission critical.
- Document this information and distribute it throughout the organization.

2. Measure:

- Measure the important technical parameters already defined.
- Track those measurements over time.
- Set critical thresholds.
- Automate data gathering and correlation.

3. Report:

- Submit relevant performance reports regularly to management.
- Communicate important measurement information throughout the enterprise (along with any necessary explanations about what it means and how it should be used).

4. Link:

- Work with business managers to ensure that monitored applications are business critical.
 - Establish business-relevant performance targets and application-level service-level agreements.
 - Meet periodically with business managers to review these targets and SLAs.
- Benchmarking these best practices lets

you assess your progress. A benchmark score shows on a numerical scale how well you are implementing best practices, which can be compared with the industry norm and with those who are executing well and achieving best results.

Survey results: continuous improvement

This year's survey of 300 enterprises is the second APM benchmarking survey NetForecast has completed — the first was in February 2007.

We analyzed each respondent's answers to formulate an APM benchmark score for each of the four best practices using a 10-point scale, with 10 the best score (highly organized and formal approach) and 0 the poorest (no attempt to perform the func-

tion). We then aggregated the four individual best-practice benchmark scores into an overall best-practice score for each enterprise.

The graphic at left shows the overall APM benchmark-score distribution across the survey population. This year's median benchmark score for all enterprises surveyed is 5 — smack in the middle of the 10-point scale. Three enterprises achieved benchmark scores above 9, and two received scores below 1.

This year's median score is a 10% improvement compared with the results from our February 2007 survey, which showed a median of 4.

In addition, this year's smooth, bell-shaped distribution around the median is better than last year's curved distribution, which bulged asymmetrically toward poorer scores. This change indicates that APM practices are getting better overall.

Diving into the individual best-practice elements, reporting scored the highest marks, followed by understanding, linking and measuring.

Comparing this year's scores to last year, the biggest improvements are in reporting and linking, which showed 40% improvements. The median score for understanding application performance improved 30%, while the median score for measurement best practices remained essentially unchanged. These results point to process improvement over the past year.

So, APM practices improved over the past year. But how does that translate into results?

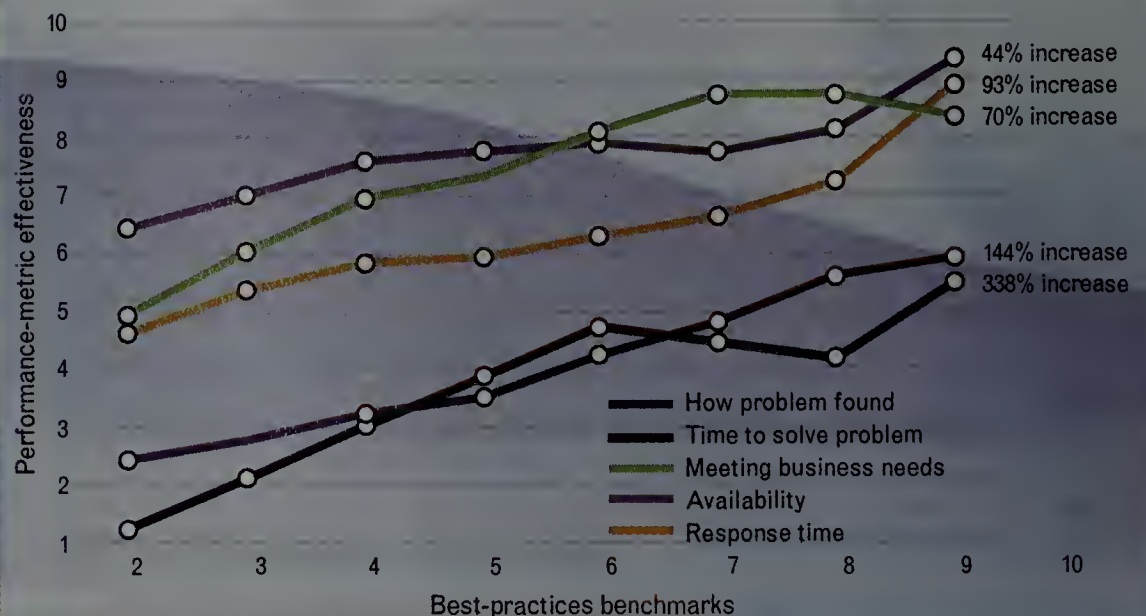
Higher benchmark scores equal better performance

The survey results show extremely positive correlations between best-practices benchmark scores and actual application-

See Applications, page 35

Best practices have a big impact

Companies that follow APM best practices report they find out about problems and solve them more quickly than companies that don't.



How to Contact APC

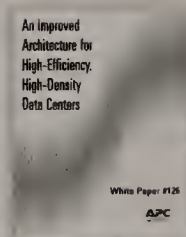
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Applications

continued from page 34

performance delivered to the business.

The graphic on the previous page illustrates how dramatic these correlations are. On the whole, enterprises with excellent best practices deliver 100% better results to their users than those with poor practices.

Here's where the rubber meets the road: Our survey results show that best practices exert their most dramatic effect on reducing the time it takes enterprises to solve problems, with a 338% score improvement in problem-resolution time among those with best practices compared with their more poorly performing counterparts.

The bulk of those with poor benchmarking scores describe their problem resolution times as too long, whereas respondents with high benchmarking scores generally describe problem resolution times as meeting or exceeding industry norms.

Those with the top best-practices scores were more than twice as likely (144%) as those with poor scores to discover problems through systems vs. learning about them from users — and they were twice as likely (93%) to favorably assess the overall response times for important applications. Highest-scoring respondents also were more likely (70%) to assess the performance of their business-critical applications as meeting their business needs.

Availability showed the least improvement in effectiveness from the worst- to the best-performing enterprises. This may indicate that availability is relatively consistent across the survey population. It may be that availability may be nearing as good as it can get.

ITIL is in

We asked survey participants whether they have adopted or plan to adopt formal frameworks to improve APM. Sixty-two percent of respondents have adopted or plan to adopt the ITSM framework, as defined by ITIL, while 24% have or will adopt FCAPS, as defined by ISO.

There was a hefty increase in the percentage of ITSM adoptees — from 54% in 2007 to 62% this year — and an even heftier decrease in FCAPS adoption — from 46% last year to 24% this year. The ITSM framework clearly is waxing in popularity and the FCAPS framework is on the wane.

Distant contenders this year are the Object Management Group's Common Object Request Broker Architecture (5%), and the Distributed Management Task Force's Common Information Model barely on the radar screen (3%).

Impediments to APM best practices

Finally, we asked enterprises to identify impediments to improving application performance (see graphic, this page). Insufficient cross-group collaboration, insufficient manpower and lack of proper tools

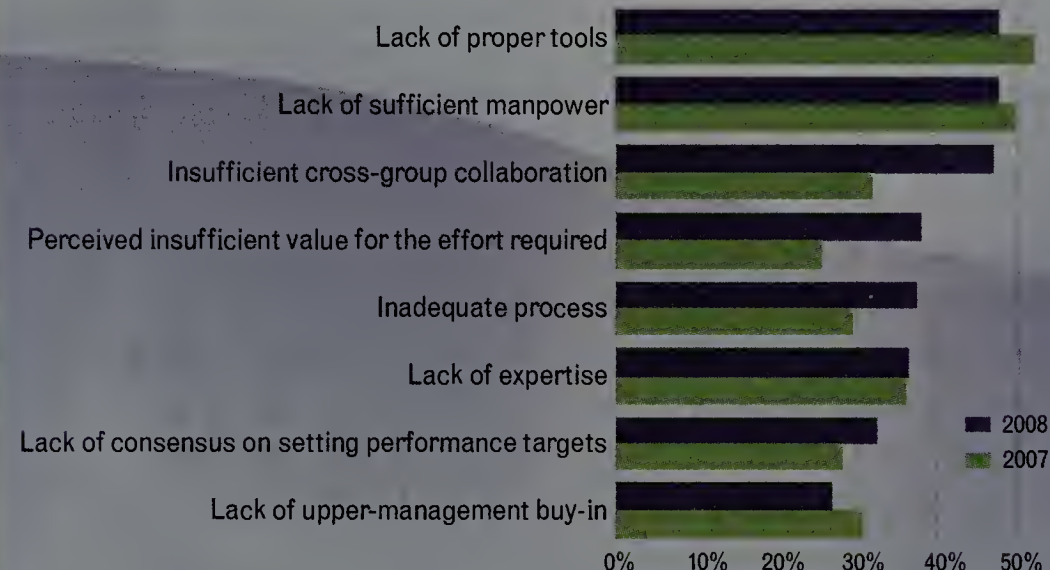
tie for the top of this year's list of impediments, with nearly 50% of respondents mentioning them.

A second group of impediments were mentioned by about 40% of respondents — perceived insufficient value for the effort required, inadequate process and lack of expertise.

We also find that enterprises are learning the APM best-practices ropes quickly, with a 10% overall improvement in benchmark scores over last year. That improvement may continue because better application performance makes a business healthier and users happier and more productive. In short, the NetForecast study results show

What's holding customers back?

The top impediments to implementing APM best practices are lack of proper tools, lack of manpower and insufficient cross-group collaboration. The results over time show that people and process issues are gaining in importance, while tools issues are falling.



We saw a 15% increase compared with last year in respondents citing insufficient cross-group collaboration as an impediment. We surmise that managing application performance requires more interdepartmental collaboration than departments have been used to, and that processes have not been implemented that facilitate the needed collaboration. Groups often are more accustomed to sniping at each other about who is at fault than working together to solve performance problems.

Also of interest is a 12% increase in respondents citing perceived insufficient value for the effort required as an impediment to improving application performance. This probably reflects increasing awareness that investment is needed in APM facilities and process, yet convincing management to spend is often challenging because the return on that investment is hard to quantify.

Conclusions

The NetForecast survey results show a compelling relationship between implementing best practices and better enterprise business-application performance. This indicates a worthwhile ROI in the people and processes required to improve a company's best-practices benchmark score. Our data reveals that the higher a company's benchmark score is, the better its business-critical performance results are likely to be.

that implementing APM best practices is well worth the trouble.

Until now, discussion about APM has centered on products. As important as products are, it is the people and the processes that make performance better. We encourage enterprises to approach APM holistically and put products in their proper place within a larger business and human-centered context.

Sevcik is president of NetForecast and founder of the Apdex Alliance. He is an authority on measuring, assessing and improving the performance of network applications. Sevcik has contributed to the design of more than 100 networks, including the Internet, and to the success of more than 25 application management products. He can be reached at peter@netforecast.com.

Wetzel is an associate of NetForecast and a veteran of the data networking industry. She works with network product vendors and service providers to develop and implement successful product and marketing strategies. She can be reached at rebecca@netforecast.com.

Visit our **App Performance View** blog at www.nwdocfinder.com/7021 for more findings from the NetForecast survey.

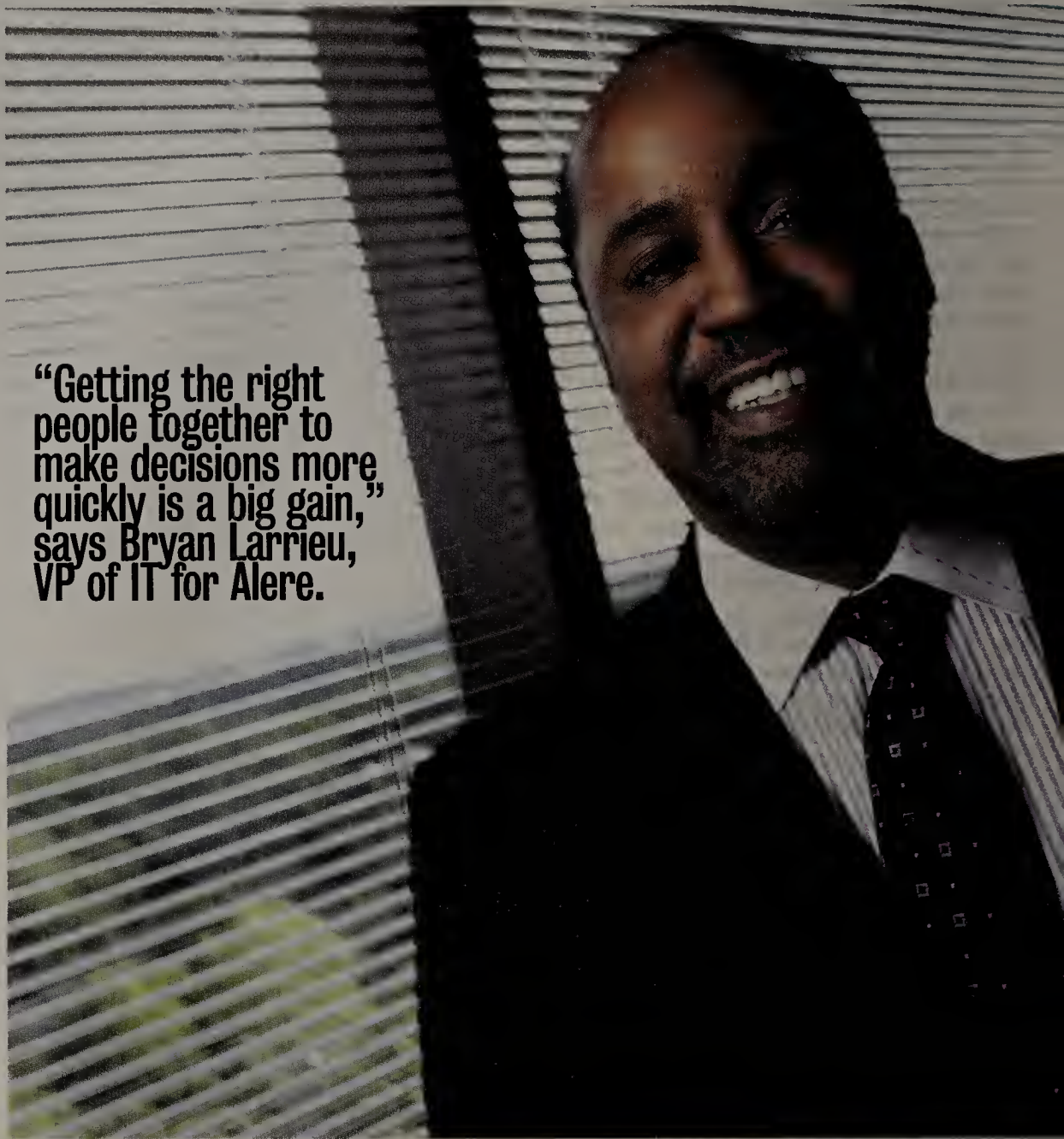
Toward a unified front

Alere finds unified communications helps streamline operations, keep costs under control and foster knowledge-sharing — without regard for geography

BY PAUL DESMOND

Establishing effective communications is a challenge in any company, but it's even more so in one created through mergers and acquisitions, such as health-care services provider Alere. Bryan Larrieu, vice president of IT operations, ended up at Alere after Inverness Medical Innovations acquired his employer Matria Healthcare. Matria merged with Alere Medical and ParadigmHealth last month to form the new Alere. Larrieu's organization now is responsible for about 3,600 employees, six data centers, 15 sites with 50 or more people, five satellite offices and some 400 teleworkers. Unified communications technology has helped Larrieu cut costs, streamline communications and generate cooperative thinking.

"Getting the right people together to make decisions more quickly is a big gain," says Bryan Larrieu, VP of IT for Alere.



KEVIN GARRETT

VoIP is at the heart of many unified communications implementations. I imagine you have a mix, given all the mergers.

I support five platforms from Cisco and Avaya. The longest has been in about seven years. We've had a Cisco IPCC [IP Contact Center] platform for at least five years in one of our

legacy environments, and the Avaya VoIP platform in another. The Avaya will be our platform going forward. It's the larger of the implementations and is a more current generation.

Are the 400 employees who work remotely using VoIP?

Yes, they have VoIP and full [computer-telephone integration] with our applications, and instant messaging as well.

Outline your UC platform.

Our primary platform is Microsoft Office Communications Server (OCS), which allows IM and video connectivity, as well as presence. We also offer videoconferencing on another platform, leveraging the same converged backbone for interoffice communications. We also use MOSS [Microsoft Office SharePoint Server 2007] for collaboration. That includes not just documents, but blogs and blogging forums

where teams can post information and see updates to questions and/or documents. You can have a document of record that you don't have to pull down to a local desktop, for example — changes can be made right on SharePoint. With the blogs, we do a lot of, 'Does anybody know, has anybody seen, has anybody heard about?' MOSS also houses our intranet, so corporate communications are posted there, and some e-learning modules.

What about unified messaging — is it part of your VoIP platforms?

It is, but we haven't rolled it out. Ultimately, when we roll out Avaya, there will be shared voice mail and five-digit dialing, probably by year-end. In the next six to 12 months we'll have full voice-mail integration, leveraging the Avaya platform. You'll be able to pull voice mail from e-mail and even manage it from a

See Larrieu, page 40



Lila Tretikov, CIO at SugarCRM, says the question is not whether you should imple-

ment unified communications technologies, but how. **Page 41.**

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60K

Larrieu

continued from page 36

GUI, so you can click on the icon and play it on your desktop, or drag and drop a message over to another mailbox.

It's interesting that you've had VoIP for that long but haven't implemented unified messaging yet. Why is that?

It's been a challenge with all the integrations we've done. Matria had done four acquisitions in 24 months. Alere did three in the last 24 months. Every time you're getting ready to get something figured out, you've got to bolt on a new business. Priorities and investments change.

How do your employees use these unified-communications tools day-to-day?

IM is huge, when you want to quickly pull a group together and send out a uniform message. We also do conference calls with partners and customers, and IM allows us to share thoughts among ourselves outside of the call. Our developers also use IM to share lines of code. They'll go into OCS and send a piece of code that can be used for testing right on the spot, or put it up for review in the forum, or collaborate on the code right there. So, that kind of efficiency is a huge gain for us.

How are you using video?

To save on travel. We're on the front end of our video implementation. We have at least one conference room in every site, and we're starting to push it to the desktop. We're proba-

bly 5% to 10% into the implementation, starting with IT, both operations and development.

How are you using blogs?

We have a couple of architects who every Friday morning send out a blog on various topics, whether it's architecture, an application, an infrastructure play or software-as-a-service. It stimulates thought about how we're looking at new technologies and how we can implement or integrate them. You get a broad perspective because we're marrying several development teams because of all the integration activity.

Was that kind of thought stimulation happening at all before?

No, it wasn't. It came about when we were looking at how best to leverage SharePoint Services. We knew that HR and operations each wanted a portal to share information. We [in IT] wanted to share reports up the chain regarding our metrics. And someone said, you know, we could use this as a portal for ideation. It was just something that got born as we were looking at some of the tools within the tools.

How about presence technology — is it changing life for employees?

Let's say I'm using workflow to route a document. I can tell whether you're in or out of the office based upon your icon. If you're not there, I'll send the document around you to the next person in the approval chain. If I know you're on vacation because you've posted that on your IM icon, then I'm not waiting for an e-mail from you. It allows us to keep things flowing.

Also, in any contact center, you have skills-

based routing. If you're fielding a call from a customer and you don't have a certain skill set to take them to the next level, you can look within the group to see if an agent with the appropriate skills is available. That's probably the biggest win we've gotten out of presence.

And these people can be anywhere, such as nurses who work out of their homes?

There is no way for you to tell whether I'm at home, in my car or in my office.

What about the 400 people who work at home or in satellite offices? What do these tools mean to them?

It allows me to find talent in other geographical regions and be able to communicate with them, both inbound and outbound, to affect our mission. That's a huge upside, being able to tap resources outside your geographical region. The other part is, it's a morale booster if I can tell a person, you can work from home a couple of days a week so you don't have to sit in traffic.

How did you get buy-in for these tools? What was the business case?

Cost avoidance. We brought it to the business as an opportunity and got immediate buy-in. Our assessments have changed greatly because the original numbers didn't have the three new companies bolted together. So, the math is still good, but it's a larger number. Originally, for telecom we realized about \$1.2 million in savings just from collapsing our voice and data onto one backbone.

Once you implement UC tools, how do you get people to use them?

Instant messaging took no time to do. Video conferencing was kind of a mandate. We went to HR and the executive team and said, 'we have a way to reduce travel costs.' They challenged employees, asking them if meetings could be done via video vs. getting on a plane. So, we got executive support on the video piece, and that's big in terms of getting people to use it. But we also had people trying to get more out of their resources to become more productive. So, they were kind of a natural migratory path. And most of us have kids who IM, and we're trying to keep up with them. My kids told me e-mail was old hat.

How would you say unified communications has affected decision-making?

It's greatly improved it, because now I can quickly bring together all the people whom I need to make the decision. And I can do it via video if I so choose or set up a chat. So, getting the right people together to make decisions more quickly is a big gain.

What has surprised you the most about your unified communications deployment?

The [high] quality of the voice and the video calls going across the wide area, even over a large number of miles.

Getting Personal: Bryan Larrieu

Title:	Vice president of IT operations
Organization:	Alere
Responsibilities:	Engineering and operations responsibility for data center, LAN, WAN, telephony, computing resources, security and backup. Operations responsibility for database, applications, disaster-recovery and business-continuity planning, intranet and Internet connectivity.
Annual IT budget:	\$10 million+
Number of IT staff:	87
Education:	BA Math/Computer Science, Talladega College
Previous jobs:	Vice president for network, telecommunications and systems security at CheckFree
First PC:	Apple IIc
Home network:	"Wireless network supporting three desktop and two laptop PCs, with 2T NAS and 3M DSL service plus integrated Windows Media Center Extender with Xbox."
First Internet experience:	"Using a 9.6-baud modem to FTP files among a group of friends and thinking how cool it was to be able to transfer files without having to use 720k floppies."
Words to live by:	We are what we continually do.

Sweet communications

Open source software purveyor SugarCRM practices what it preaches, using a set of open communications tools as the foundation of company — and customer — communications

BY PAUL DESMOND

The question is not whether you should implement unified communications technologies when your company is in the open source community and full of employees fresh from college who would rather instant-message than make a phone call. The question is how, says Lila Tretikov, CIO at SugarCRM, an open source software company founded in 2004. The company ties multiple unified communications packages into its own relationship management platform to enable effective communications among its workforce of 150 employees — at least 25% of them remote — and a development group in Shanghai, China, as well as customers and the extended open source community.

What are some of the tools you use that play into unified communications?

We have our own plug-in for VoIP phones, called Sugar Phones, for our CRM system, which is what the company runs on. The CRM system is not just for sales, it's a tool to keep people, management and communications in sync across the organization. Everyone in the company uses the Sugar platform for whatever they need to do, whether it's HR or support, sales or finance. On top of that there's the phone, IM and e-mail all plugged in. Those are the dominant ones, and then there are infrastructure pieces, such as VPN.

Is your VoIP platform open source?

The VoIP server is built on top of Digium [which developed the Asterisk open source telephony platform]. We use the supported ver-

sion. We get voice mail by e-mail, as part of the VoIP server setup. We have a converged network going into headquarters, with all voice, data and video going over fiber, all IP.

What about presence capabilities?

Calendars plug into Sugar's own software, and you can use Outlook or whatever client you're comfortable with. So, you can see if somebody's in a meeting, and over IM you can also see whether someone is available or not. Today everyone uses Yahoo IM. That is going to change in the next little while to an internally hosted solution. We're not sure which one yet.

Do you also use online meeting tools?

Our biggest installation is [Citrix Systems'] GoToMeeting, but some people use others for specific reasons. So, we use [Cisco's] WebEx

and some Dimdim, for really simple things — the open source version of Dimdim that has video, audio and everything else built in.

How does all of this play out in practice?

Let's start with the meeting tools. They are mostly used by sales engineers and the sales department, who use desktop-sharing and presentation-sharing software. More often than not, especially for initial meetings, it's very satisfactory. They can take the customer along, doing a presentation completely virtually. We also set up a lot of training Webinars that we publish on the Web. Some are live, some prerecorded. In terms of educating and early sales education, that is invaluable for us. And we use it internally to communicate with remote employees. When engineering has meetings with

See Tretikov, page 44



RICHARD MORGENSTEIN

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Tretikov

continued from page 41

China, they use VoIP communications and video to communicate with them. We have a room with a big flat-screen TV so people can see each other — a virtual office. We use Skype for video, and the environment is set up so you don't have to use your own computer.

IM is also used constantly. That's probably our primary method of communication before we pick up the phone or anything else. So, people who are in the same or similar time zones tend to use IM, and people who are in different hemispheres use e-mail or schedule meetings using a virtual office environment.

Larger companies sometimes have issues getting people to use these tools. Did you face any of that?

Not at all. It's an open source company, so that type of communication is built into the DNA of the business. It's almost harder to get people to use more traditional forms of communication, rather than the other way around. I have people on my team who will update what they're working on using Twitter. I'll get Twitter updates, saying part of my team is working on this, another part is working on that.

Can you speak to what these tools have meant to the company as opposed to buying off-the-shelf software?

We do have off-the-shelf software, but Sugar has always been a lean, mean kind of machine. And a lot of our company is young, just coming out of college, so these are the tools they're used to. We don't see any need to stifle that. If they're productive with them, why not let them continue to use them? In our experience people are happier having that freedom. Productivity is high because people are happy with them, they use them and they're extremely immediate. You can send an e-mail and if the e-mail doesn't get a response, you can use IM or chat. If you go on an IRC [Internet Relay Chat] channel, you can find multiple people who can answer your question.

How is IRC used?

Think of it as a chat room. It's used for internal teams and external developers. Whenever someone from the community comes in and asks a question, anyone within the company can see the question and respond to it. And for developers who have tons of people using Sugar in, let's say Europe, IRC is much more convenient than other mediums.

Is there anything that has not worked too well with respect to your unified-communications efforts?

The problem I see the most is that there are tons of tools out there but they're not linked in together very well. They're just not mature enough where you have a complete communications console. It's a trade-off. If you look at Gmail, [Google has] some things integrated there. The problem is, you have to use

Getting Personal: Lila Tretikov

Title:	CIO
Organization:	SugarCRM
Responsibilities:	Data center operations, internal IT administration, internal operations, some R&D.
Annual IT budget:	About \$1 million, not including salaries.
Number of IT staff:	14
Education:	Degree from Lomonosov Moscow State University; computer science research on computational complexity theory at University of California at Berkeley.
Previous jobs:	Applications and creative director for Bank of America; Engineering director at Telespree, working on network applications for Sprint/Nextel; Application architect for Human Genome Project at Lawrence Berkeley National Laboratory.
First PC:	IBM Intel-8088-based PC.
Home network:	Wireless network with three desktops, one of which is a server, and three laptops.
First Internet experience:	Probably communicating with friends out of a Unix shell window, chatting.
Words to live by:	Change is the only constant.

Gmail. If you want to host your e-mail in-house, there's no option for that. Microsoft with its latest [Office Communications Server] is more like a complete console, but it doesn't have everything that we use. Microsoft has an in-house e-mail option, but the way Microsoft technologies work is, a lot of times once you get one [tool] and it percolates and everything else has to be hooked in, and the product is also proprietary.

So, what I'm looking for, and we're getting there pretty quickly, is a unified console where all of your communications are tied in, and your relationship system as well. So, you have your phone, chat, SMS client and e-mail, all within the same visibility frame. And there's intelligence around it, so if the same person calls and e-mails you, all of that is tied in together. If someone is e-mailing you, the system might already know this is an important contact, based on your response rate, and it will highlight it for you or display it larger. It also will tie in all of the other communications you've had with that person. A lot of times CRM does that, but the hooks need to be there either within the CRM system or within the communications panel itself.

What are some of the challenges in providing proper security when you're using all these tools?

Good encryption is one. Today, most of the time you have to install something specific for a particular client and both parties have to have it; there's no de facto standard. With our internal users, for remote users we use a VPN, so the channels are encrypted. With partners and customers, usually it's not particularly sensitive data, typically just demos or presentations. If you're going to be communicating any

kind of private data, we require you encrypt your communication channels. You download software, PGP for example, for chat. E-mail just goes over SSL and phone calls go over the VPN.

What would you say are the keys to rolling out the same sorts of unified-communications tools on a larger scale?

With larger companies you need to have a clear strategy. If you look at a company like Google, they have a bottom-up approach. They allow their users to do whatever they want in their particular group, more or less. Those people who want to use Twitter for their communications, they can. Larger companies I've worked for, like [Bank of America], you're just not going to have access to those sites [like Twitter] because they block them for security purposes. In an environment like that, you have to have a very clear strategy because you can't allow grass-roots mechanisms. And that means you have to go figure out, is Microsoft Communicator sufficient for my needs or do I need something else? If I need something else, am I going to do a hodgepodge? How do I connect those technologies?

Is there any way to gauge the productivity gains you're getting?

It's really hard to tell, but my guess is that we get gains because it's just so much easier to communicate while you're doing other things. For me, it's probably about a 30% gain. I'm pretty decent at multitasking, so I can parallelize a lot. It ultimately depends on the person.

Desmond is events editor for Network World and president of PDEdit, an IT publishing company in Southborough, Mass. Reach him at paul@pdedit.com.

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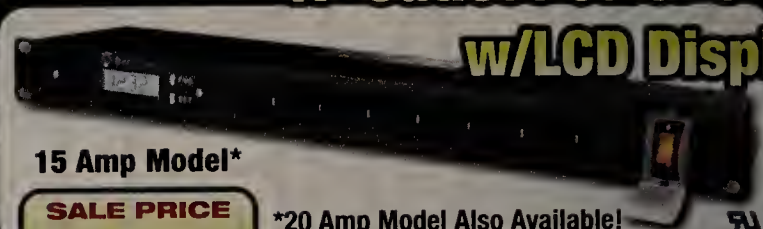
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Texas

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the campus Xythos Software online-document management system. Since deploying Xythos in the spring of 2008, ACU has been building applications on top of it, including a class-folder system: For each class, teachers can add a syllabus, a spreadsheet, PDF files, video clips, podcasts, all accessible by iPhone from wherever there is wireless access.

ACU created a bundle of Web-based mobile applications, rather than make use of Apple's software developers kit. That gives the school the option of making use of other devices in the future, possibly a touch-based Android phone, running a full mobile-Web browser, such as Firefox for Mobile, now in development. These new mobile applications — and others, such as Google Apps for Education, a suite of e-mail and other cloud-based services — are all accessible as soon as users complete their logon authentication.

One group of ACU applications heavily used by Davis during her first week or so on campus is called mymobile. "You click on the tab and it tells you the classes you're enrolled in, where they are, the professor's name; and [gives you] a 3-D map of the campus," she says. "That was really, really helpful to find your way around."

Part of mymobile is what ACU calls NANO tools, for "no advanced notice." These are a set of interactive quizzes, polls and other programs for class use. Davis says her Bible class professor is constantly doing in-class, online polls of the students, who select answers via the device's Safari Web browser. "It's really neat. You can see the results changing," she says.

A second tab is ACUmobile, which has campus calendars, events and photos taken by students. A third tab, pocketguide, contains information about the city of Abilene: places to eat, bands, coffee shops and the like.

The devices are constantly in use, not just in class but across the campus, apparently making it easier and faster for students to find and develop their own place in the campus community. One of the first applications Davis downloaded from Apple's App Store was the Facebook application, where she has her own profile and networks of family, friends and classmates. "I'm always logged in, and it's just like being on my computer," she says.

Davis keeps in touch with nearly all of them, sending and receiving 200 to 300 text messages a day. That was one of the two problems she encountered with her iPhone: shifting from being a texting speed-freak with her old Samsung Wafer phone on Alltel's network to the iPhone's virtual keyboard. "I'm as fast as I used to be, but

now I do have to look at the keypad," she says.

The other problem was draining her iPhone battery, which happened almost daily to start with, until she shut off the 3G connection while on campus and relied on ACU's just-upgraded Alcatel-Lucent Wi-Fi network (the vendor has an OEM arrangement with Aruba Networks for wireless LAN [WLAN] equipment). When it learned of the school's plans, AT&T, the iPhone's sole U.S. carrier, upgraded the campus area with 3G base stations. ACU says 3G performance is consistently about 900Kbps compared with AT&T's EDGE network at 300K to 400Kbps.

"If I didn't have my iPhone, I would feel like I was out of the loop," Davis says.

iPhone sparks mobility pilot

The range of Davis' uses and her constant reliance on the device are evidence to ACU IT, faculty and administrators that the university's bet on developing an ultra-mobile platform for campus life is paying off. A few years ago, the school evaluated the costs and benefits of equipping each student with a notebook, says CIO Kevin Roberts. The PCs were still bulky and expensive, however, with "abysmal" battery life; and ACU discovered 95% of its students were showing up with some kind of PC of their own.

Eighteen months ago, hearing rumors of the impending iPhone launch, ACU faculty and IT staff brainstormed about how a wireless, handheld device, with a full Web browser and support for voice, could impact student learning and life. "We're connected today in ways we couldn't even dream of 10 years ago," Roberts says. "But our classes look very similar to the classes of 100 or even 200 years ago. Why not meet the students where they are today, using the tools they already have to leverage the education process?"

When iPhone was released, the school bought nearly two dozen to test. By December 2007, campus officials decided they had what they needed.

Well, almost. The university decided to focus on just the incoming freshmen, rather than try

to equip and support all nearly 4,000 undergrads. Even so, IT staff realized the campus Wi-Fi network had not been designed to support a fully and constantly connected population. "As I thought this through, I realized these [handhelds] were wireless-only devices, and much better positioned than laptops for doing all kinds of things like quick lookups," says Arthur Brant, ACU's director of networking services. "That meant these devices would be used a lot more than laptops."

That meant redesigning the WLAN for capacity, Brant says. In record time, the campus network was completely overhauled, jumping from 176 access points to 500; another 130 or so are scheduled for deployment in summer 2009. The goal was to give 1Mbps to each user, Brant says. One key part of this rollout was extensive signal and performance testing to make sure the WLAN was delivering that performance.

The access points support 802.11a/b/g, though the Apple handhelds run only on 802.11g in the 2.4GHz band, posing some tough challenges in large lecture halls with lots of students. The first time 300 students in a Bible class tried to connect in a lecture hall with four access points, not one succeeded. There are now 12 access points, with power levels adjusted and channel plans in place to support such use.

ACU is working now to configure wireless laptops to select 802.11a automatically, shifting clients from the crowded 2.4GHz band to the much less crowded 5GHz band.

Traffic and usage data specifically from the iPhone and iPod Touch users is sketchy right now. Brant says there has been a 150% increase in the number of registered devices on the network compared with last year, and they're not all Apple devices: There's been a jump in Wi-Fi or dual-mode Windows Mobile and BlackBerry devices also.

Internet bandwidth use is up sharply also. Typically, it takes about three months at the start of the academic year to max out ACU's Internet connection, currently peaking at 80Mbps. This year, it took only six weeks. ■

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BACKSPIN

Mark Gibbs

Errant e-mail to me will cost you

If you get stopped by a cop for breaking the speed limit and you contend you didn't know the limit, you'll still get a ticket because ignorance of the law is no excuse. When it comes to technology, the same rule applies — you don't get a pass simply because you don't understand it.

For example, have you ever sent e-mail to a domain you weren't exactly sure of? Maybe the intended recipient gave you an e-mail address over the phone or you used one from memory.

I have a "catch-all" address in my domain for e-mail that isn't destined for a names account, and every day about 100 people in the wide electronic world assumes their recipient is at gibbs.com when what they really want is something like gibbscam.com or gibbswire.com.

When I have time and can determine who the recipient was supposed to be and can be bothered, I'll be nice and resend them. Usually, however, the rest of the messages just sit in the catchall folder until I delete them every couple of months. What's interesting is how many messages come with dire warnings such as:

"This message is intended solely for the use of the individual and entity to whom it is addressed, and may contain information that is privileged, confidential and exempt from disclosure under applicable state and federal laws. If you are not the addressee, or are not authorized to receive for the intended addressee, you are hereby notified that you may not use, copy, distribute, or disclose to anyone this message or the information contained herein. If you have received this message in error, immediately advise the sender by reply e-mail and destroy this message."

You see this on just about every other e-mail and it looks serious, but

is it really? It says clearly you shouldn't do anything with the message contents or you'll be really sorry.

That's ridiculous because if the contents were that important and you weren't certain where they might wind up (which is what your notice implies), then no amount of threatening words can prevent damage from a recipient with malicious or larcenous intent.

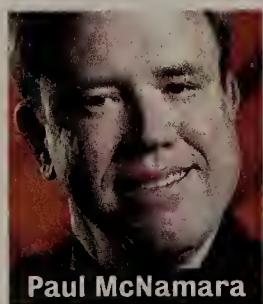
So, let's say you misaddress e-mail about some financial matters that shouldn't be made public and it winds up in my catch-all account. I could pass on the message to anyone I please and there's no way you can prove I ever received it or acted on it for two reasons.

First, you, a priori, confessed in your warning that you are a clueless noob so it could have gone anywhere. Second, even if you could get a search warrant to forensically examine my systems you wouldn't find anything. And even if you could "prove" from your server logs that my mail server received it from your server, you couldn't prove I'd read it before it was deleted and purged.

But back to the demand that the sender be notified: Little do these noobs know that I am about to charge \$100 to notify them that they've screwed up and I will require, in writing and delivered by registered mail, a notarized affidavit confirming they were indeed the sender before I will delete their message. A cashier's check must accompany the affidavit. In fact, I might automate the process and arrange for all catch-all messages that are not claimed and paid for to be automatically posted publicly on my Web site. This could be, as we say in England, a nice little earner.

If you screw up and send e-mail to me rather than who you meant to send it to, prepare to pay. Ignorance of the law is no excuse and neither is ignorance of technology.

Gibbs can be reached at backspin@gibbs.com.



Paul McNamara

NETBUZZ News, Insights, oddities

Verizon exposes the wrong e-mail addresses

This should be a vendor's first rule when inviting 1,200 IT pros to a seminar about securing data and protecting personal information: Make sure you protect the personal information of the 1,200 pros you're trying to impress.

How did Verizon do in that regard last Tuesday? It failed miserably.

David Williams, technology coordinator for a Texas school district, alerted me to the situation because he had read my recent Buzzblog post — "Run-amok Verizon robo-caller torments 1,400 customers" — which recounted the nine phone calls in 24 hours that were received at my house.

"I had something similar occur today," Williams wrote. "In a period of three hours I received 14 e-mails promoting Verizon's 'Secure the Information. Secure the Infrastructure' webinar series, and three e-mails promoting their '2008 Data Breach Investigations Report Road Show.'"

The excessive volume of e-mail wasn't the half of it, though. "Considering their content [about data-breach seminars], I thought it very humorous that the To: field of the e-mails contained over 1,200 e-mail addresses: 17 e-mails times 1,200 addresses equals more than 20,000 chances for leaks."

Williams did more than chuckle, though, he tried to help by forwarding to the Verizon sender a pair of online essays — "Sins of The Internet: Not Using Bcc," and, "Use BCC field when addressing mass mail."

Williams wrote the miscreant in reply: "I apologize for the inconvenience and lapse in judgment by not using the BCC field."

Contrition, however, failed to stem the flow of seminar invitations.

"You've got to be kidding," he wrote to the Verizon guy shortly thereafter. "I have received seven more duplicates after this response."

Verizon again: "We [are] having issues with our [Microsoft]

Exchange server, and I am working with our help desk to correct the problem. I apologize for the inconvenience."

Verizon's "Secure the Information" lecture series includes a segment called, "Are you prepared for data loss?" I presume that's where the company will be covering the art of the apology.

Comic xkcd betters the 'Net . . . yet again

The influence of the Web comic xkcd apparently knows no bounds: It has now spawned a new and potentially game-changing feature on YouTube. In a recent xkcd strip, comic creator Randall Monroe suggested that YouTube users might leave fewer stupid comments if they first heard their words read back to them out loud.

Recognizing a good idea when one is offered up for free, YouTube developers went ahead and built the feature. I tried it: Wrote on one video, "Man, this is lame," pressed the "audio preview" button, heard a reasonably audible rendition of the phrase read back to me, thought better of my contribution, and hit delete.

And it's not the first time xkcd has contributed to the betterment of the Internet. About a year ago, researchers at the University of Southern California presented results from what they called the first full "Internet census" conducted in 25 years: 3 billion pings directed at 2.8 million Internet addresses. From my post about that effort:

"Presenting the census results graphically was a major challenge. . . The map is arranged not in simple ascending numerical order, but instead in a looping pattern called a Hilbert curve, which keeps adjacent addresses physically near each other, and also makes it possible to zoom seamlessly in to show greater detail. The idea of using a Hilbert curve actually came from a web comic, xkcd."

Has a comic strip creator ever won a Nobel Prize?

Send your ideas for improving the Internet to buzz@nww.com.

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